

Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study

Policy Document

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June 1996



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EXECUTIVE SUMMARY

The Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study is a planning effort by the City of Livermore to develop a comprehensive system of bikeway, pedestrian, and equestrian facilities that will serve existing and future users. Documentation for this update includes this Policy Document and a separate Background Report, which is available for review at the City of Livermore Planning Department.

Purpose

The purpose of the Policy Document is to provide direction regarding the implementation of the specific multi-use trails and bikeways contained in the proposed system, which is shown in Figure 5. It is the City's objective to explain the individual steps necessary to advance proposed facilities from the planning stage to the subsequent stages of design and construction. To meet the City's objective, this document contains goal and policy statements that clearly and concisely identify the necessary actions involved in planning, designing, funding and constructing trail and bikeway facilities. This approach relies on an understanding of the relationship between the proposed system, key issues facing implementation of specific routes, and the requirements of local, state and federal funding programs. Therefore, the focus of this document is on the goals and policies section, which is organized by "topic areas" that relate to specific implementation issues.

Plan Development

The Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study was developed through a process that included input from City staff, local and regional agency staff, and the general public. Information was developed and presented in a series working papers that allowed decisions to be made by City staff and an Advisory Committee on how to close gaps in the existing system, improve existing deficiencies, and extend routes to new development areas. In addition, the working papers contained supplemental information that is necessary when competing for state and federal funding.

Local Government and Citizen Involvement

A technical advisory committee (TAC) was formed and appointed by the City to provide input and review materials as part of the planning process. The TAC is comprised of staff members from local departments and agencies along with interested individuals from the community. It provided assistance to City staff in the development of goals, policies, and implementation programs for the planning process.

In addition to submitting materials for review by the TAC, working sessions and public workshops were held to allow members of the TAC and the public to comment on and refine the work products and discuss future steps in the process. Public input was encouraged throughout the process either directly with the planning staff or through the TAC working sessions. In addition, two public workshops were conducted to present preliminary findings, gain input, and collect comments and changes.

Proposed System

The proposed system connects major activity centers throughout Livermore and, it provides regional connections to other areas including Pleasanton, Dublin, Brushy Peak, Del Valle and Sycamore Grove Regional Parks, and Shadow Cliffs Regional Area. Figure 5 displays the proposed trail and bikeways system for the City of Livermore.

The proposed system is made up of a hierarchy of designations including Class III bike routes, Class II bike lanes and multi-use trails. The proposed system includes almost 178 total miles of multi-use trails and on-street bikeways as summarized in Table I. The totals in Table I do not include about 24 miles of long-term multi-use trails, which are either not expected to be developed within the 20-year time frame of this plan or are outside of Livermore's jurisdiction and will require significant coordination among various local and regional agencies.

Table I
PROPOSED TRAIL AND BIKEWAY SYSTEM (MILES)

Classification	Multi-Use Trails ¹	Class II Bike Lane	Class III Bike Route	Sidewalk Bikeways	Total
Existing	13.9	38.5	0.5	0.8	53.7
Proposed	53.2	54.4	16.2	0.0	123.8
Total	67.1	92.9	16.7	0.8	177.5

Notes: ¹ Does not include 23.8 miles of long term bike paths.

Implementation

For the City of Livermore, the total cost for the proposed system is \$8.9 million excluding long-term facilities. Multi-use trails in Livermore represent 90 percent of the total cost or \$8.0 million. Livermore's on-street bikeway facilities are expected to cost \$0.9 million.

Implementation of the proposed system will rely on multiple funding sources with one of the largest contributors being new development. It is estimated that new development will construct up to 40 percent of the total system. In addition, many facilities will be constructed as part of roadway projects such as the Isabel Expressway. Therefore, the total cost for the City of Livermore would be closer to \$5.3 million over the next 20 years.

Past expenditures by the City of Livermore on trail and bikeway facilities are difficult to obtain because many improvements were included as part of other projects such as roadway widenings. Nevertheless, the City estimates a total expenditure of about \$81,000 over the past six years for bike lane striping. In addition, the City receives about \$32,000 annually from the state in the form of Transportation Development Act (TDA) funds that is available for bikeway or pedestrian

improvements. According to City officials, additional funding applied to trails, bikeways and pedestrian-related improvements through other projects could push the total annual expenditures in excess of \$50,000. This would equate to a total of about \$1.0 million over the next 20 years.

With this continued level of investment, the City could not construct the entire proposed system over the next 20 years without additional resources. The following options will be considered by the City for providing the funding necessary to complete the proposed system:

- Prepare joint applications with other local and regional agencies for competitive funding programs at the state and federal levels;
- Use existing funding sources as matching funds for state and federal funding, especially through the Intermodal Surface Transportation Efficiency Act (ISTEA);
- Include trail and bikeway projects in the City's traffic impact fee program; and
- Include proposed bikeways and trails as part of roadway projects involving widening, overlays, or other improvements.

The City should also take advantage of private contributions, if appropriate, in developing the proposed system. This could include a variety of resources such as volunteer labor during construction, which is becoming popular for recreational improvements, or monetary donations towards specific improvements.

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1.0 INTRODUCTION

The Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study is a planning effort by the City of Livermore to develop a comprehensive system of bikeway, pedestrian and equestrian facilities that will serve existing and future users. Documentation for this update includes this Policy Document and a separate Background Report, which is available for review at the City of Livermore Planning Department.

Documentation for this planning effort includes the following Background Report and a separate Policy Document. The Background Report contains a summary of the information used to select the specific trail and bikeway routes contained in the proposed system with a major focus on the needs of pedestrians and bicyclists. The needs of equestrians are addressed as part of this Policy Document, which provides direction regarding the implementation and management of specific routes and facilities for all system users including bicycles, pedestrians, and equestrians. These two documents were developed to meet the requirements of both the California Bicycle Transportation Act and the Intermodal Surface Transportation Efficiency Act.

1.1 Purpose

The purpose of the Policy Document is to provide direction regarding the implementation of the specific multi-use trails and bikeways contained in the proposed system, which is shown in Figure 5. It is the City's objective to explain the individual steps necessary to advance proposed facilities from the planning stage to the subsequent stages of design and construction. To meet the City's objective, this document contains goal and policy statements that clearly and concisely identify the necessary actions involved in planning, designing, funding and constructing trail and bikeway facilities. This approach relies on an understanding of the relationship between the proposed system, key issues facing implementation of specific routes, and the requirements of local, state and federal funding programs. Therefore, the focus of this document is on the goals and policies section, which is organized by "topic areas" that relate to specific implementation issues.

1.2 Organization of the Document

The remainder of this document contains the following elements;

- Section 2 - Background;
- Section 3 - Proposed System;
- Section 4 - Proposed Equestrian Trails;
- Section 5 - Goals and Policies; and
- Section 6 - Implementation.

The background section describes how the proposed trail and bikeway system was developed. It is followed by a presentation of the proposed system and the proposed equestrian trails in Sections 3 and 4, respectively. Section 5 introduces the goals, policies and implementation programs that provide specific policy direction on how to implement the proposed system. The last section focuses on key implementation issues related to cost, coordination with other agencies, and necessary changes to existing City of Livermore plans or standards.

2.0 BACKGROUND

This section contains background information about Livermore and its existing trail and bikeway system including equestrian trails. Other key components of this section include information about how the proposed trail and bikeway system and the proposed equestrian trails (refer to Sections 3.0 and 4.0, respectively) were developed and a discussion of the justification for improving trail and bikeway facilities in Livermore. More detailed background information is available in the Background Report, which can be reviewed at the City of Livermore Planning Department.

2.1 Setting

Livermore is located in the eastern portion of Alameda County mid-way between Oakland and the San Joaquin Valley. The study area, shown in Figure 1, includes the City of Livermore and the surrounding urbanized area. The City lies in a large valley measuring approximately five miles long by ten miles wide, and is surrounded by the Diablo Range of the Coastal Range with elevations between 1,000 and 2,500 feet above sea level. The 1995 population of Livermore was estimated at 62,857 (California Department of Finance), with a 2010 projection of 110,000 persons.

2.2 Existing Trail and Bikeway System

The existing trail and bikeway system in Livermore consists of the following off-street and on-street facilities:

- Multi-Use Trail (Includes Class I bike paths);
- Class II bike lanes;
- Class III bike routes; and
- Sidewalk Bikeways.

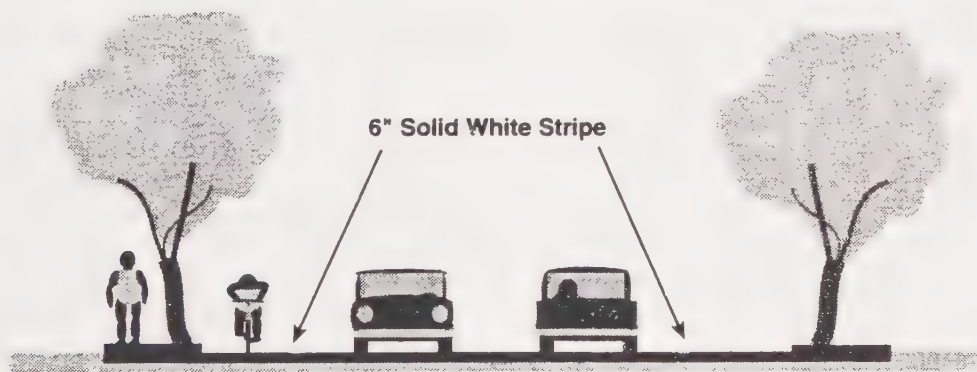
Examples of the first three facility types are shown in Figure 2. The last two facility types are not recognized by Caltrans and are not recommended components of the proposed trail and bikeway system contained in this plan.

The existing network of trails and bikeways in Livermore is shown in Figure 3. This figure does not include pedestrian-specific facilities, such as sidewalks, but does include multi-use trails, which are used by bicyclists, pedestrians, and equestrians. Table 1 provides a complete listing of existing trail and bikeway facilities (by classification) in Livermore.



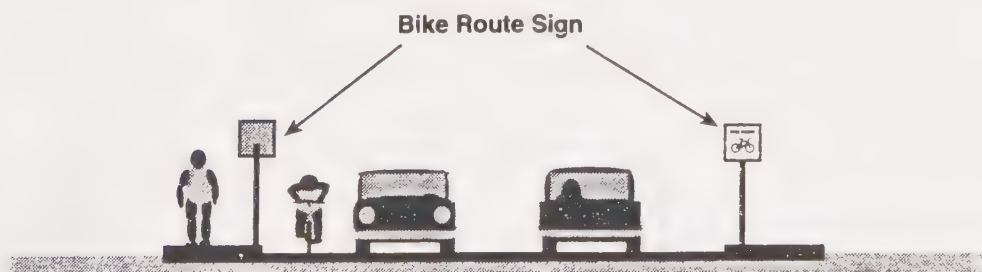
Multi-Use Trail (with Class I Bike Path)

Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized.



Class II Bike Lane

Provides a striped lane for one-way bike travel on a street or highway.

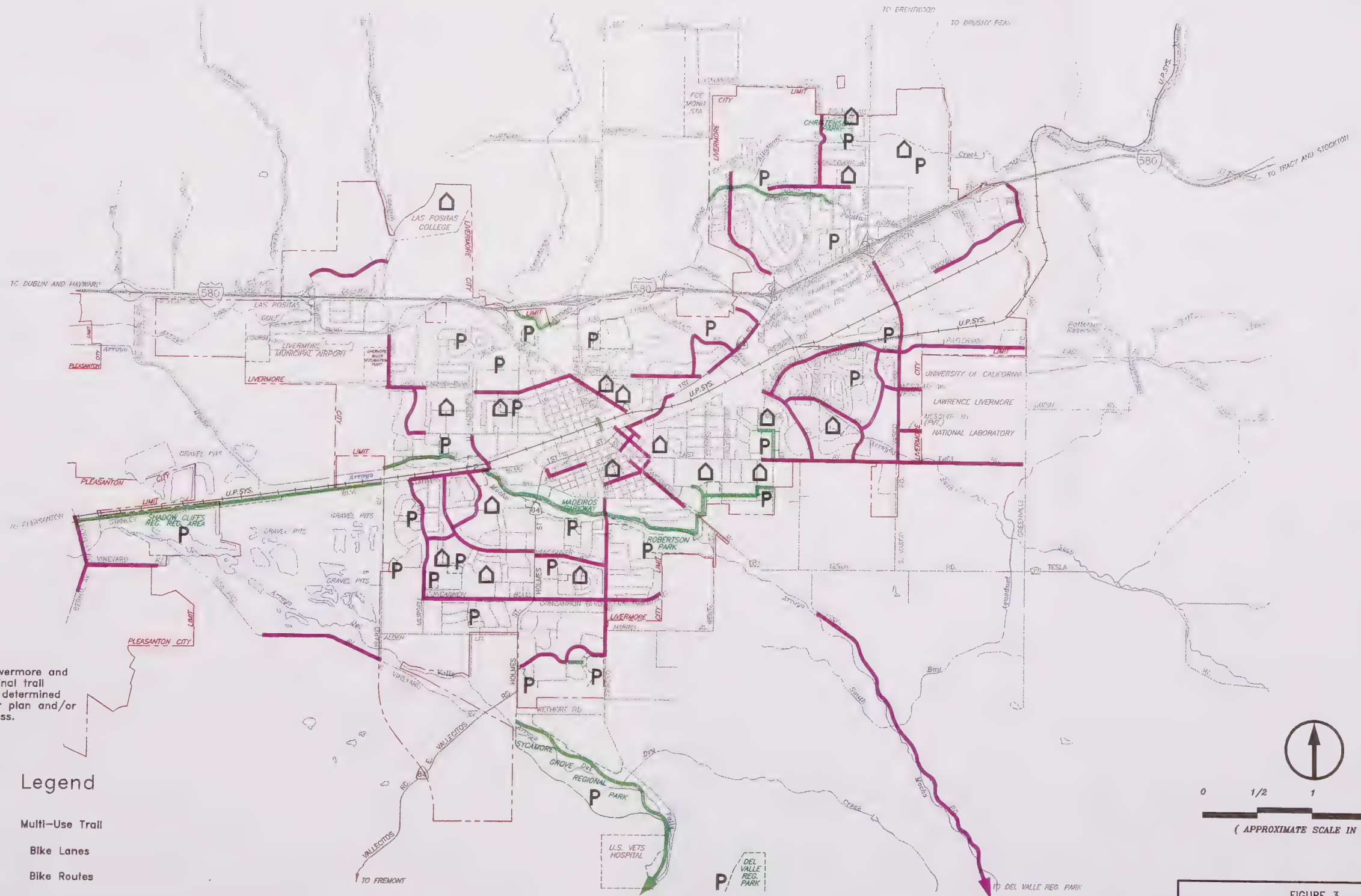


Class III Bike Route

Provides for shared use with pedestrian or motor vehicle traffic.

FIGURE 2

GENERAL BIKEWAY/TRAIL CLASSIFICATIONS



NOTE: In North Livermore and South Livermore, final trail alignments will be determined through the master plan and/or specific plan process.

- Legend**
- Existing
 - Multi-Use Trail
 - Bike Lanes
 - Bike Routes

P Parks Schools

LIVERMORE BICYCLE/PEDESTRIAN PLAN UPDATE AND EQUESTRIAN TRAILS STUDY

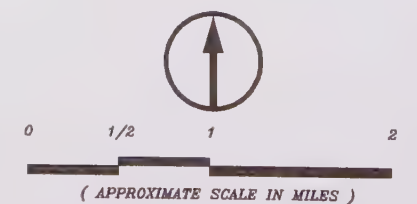


FIGURE 3

EXISTING TRAIL AND BIKEWAY SYSTEM

fp Fehr & Peers Associates, Inc.
Transportation Consultants

Table 1
EXISTING TRAIL AND BIKEWAY FACILITIES

Facility	Length (Miles)	Meets Caltrans Standards?
Multi-Use Trail (Includes Class I bike paths)	13.9	Yes
Class II bike lanes ¹	39.0	Yes
Class III bike routes	0.0	Yes
Sidewalk Bikeways	0.8	No
Total	53.7	

Notes: ¹ The total length includes about 0.5 miles of temporary Class III bike route on East Avenue.

The total length of the existing trail and bikeway system within the study area, which includes facilities outside the City of Livermore, is 53.7 miles. The system consists mainly of on-street facilities that include Class II bike lanes or striped shoulders three feet in width or greater. The overall system does not provide a high degree of connectivity, which is evidenced by system gaps in areas such as downtown and across I-580.

The pedestrian system within Livermore consists primarily of on-street sidewalks and trails through stream/creek channels. In general, all developed areas provide pedestrian facilities in the form of sidewalks and crosswalks. Pedestrian activities are most prominent in and around employment centers, shopping and business areas, schools, and recreational centers. Figure 4 shows the locations of some of the major areas of this nature. Very few pedestrian facilities exist that do not require interface with cars/traffic and associated undesirable externalities.

Existing Equestrian Facilities

Horses have been an integral part of the Livermore landscape since the City's founding in the late 1800's. The ubiquitous boarding stables, feed and tack shops, equestrian arenas, and horse ranches characterize the rural, agricultural landscape of the region. Despite increasing urbanization, equestrian activity continues to thrive with an increasing demand for new places to ride.

Currently, no equestrian trails exist within the city limits of Livermore except for a trail in LARPD's Robertson Park. Existing multi-use trails within the City do not include equestrian trails, are too short, or too far from equestrian facilities to be used by equestrians. The primary pedestrian and bicycle path through Livermore, Arroyo Mocho Trail, is ideally situated for equestrian riding since it connects to Robertson Park, which includes equestrian facilities. Due to substandard street under-crossings, numerous grade and line-of-sight constraints, and the lack of a soft footing, the trail is rarely used by equestrians.

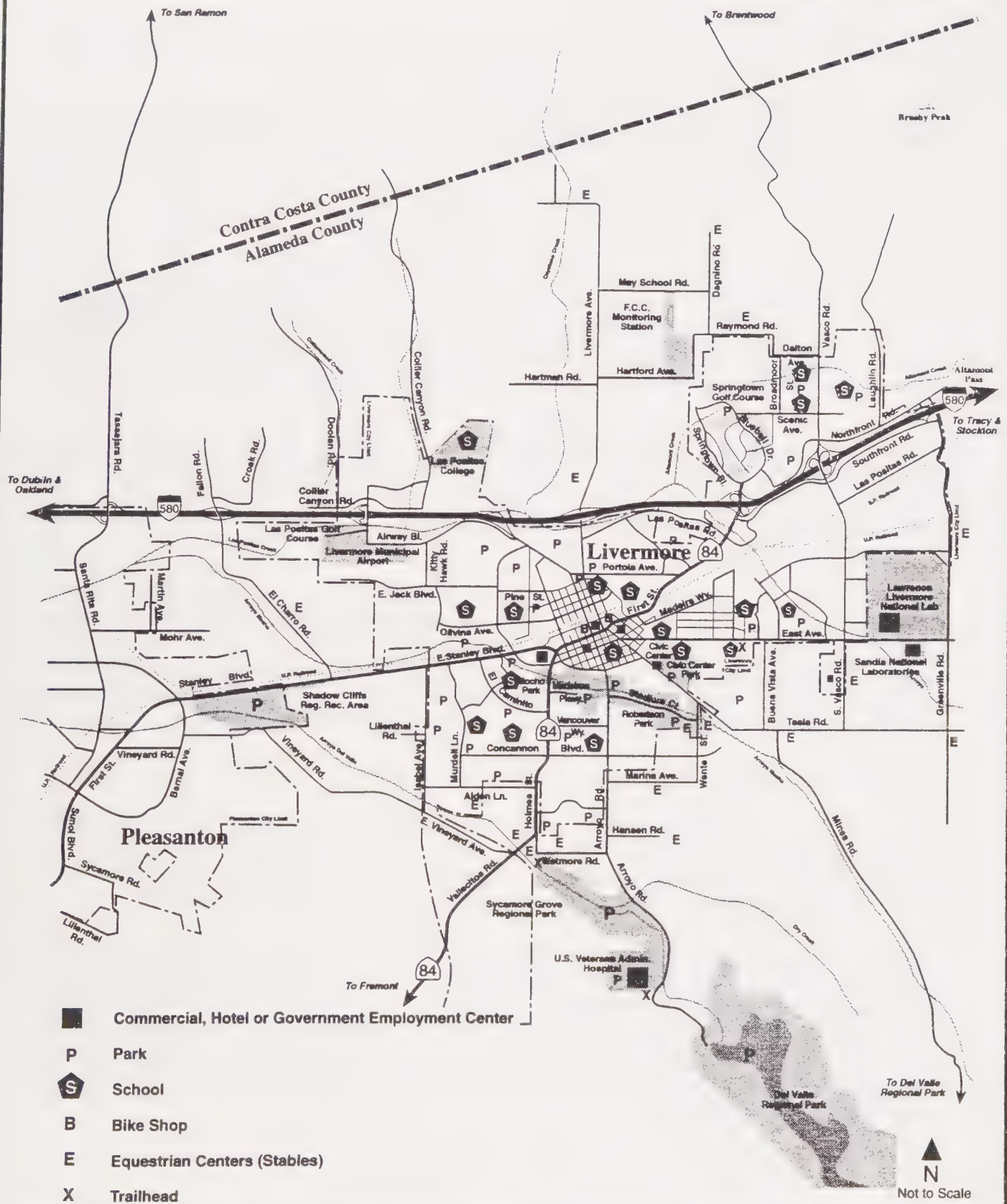


FIGURE 4

Existing Recreation and Employment Centers

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Several loop trails in Robertson Park and Sycamore Grove Regional Park provide the only local opportunities for equestrian trail riding. Robertson Park has one show arena and one practice arena and a trail which encircles the park. The arenas are well-used by both local and regional equestrians for practice riding and special events. For a more scenic riding experience, equestrians use Sycamore Grove Park. Sycamore Park is a regional park with equestrian trails and is used frequently by those who board their horses in the Livermore area.

Many equestrians formerly rode along the dirt shoulders of rural roads around Livermore including Tesla, Marina, and Mines Roads, to name a few. Over the last ten years, city and county agencies have eliminated many of these dirt shoulders by widening the paved portion of roadway or modifying the grade of dirt shoulders. These physical changes along with the general increase in traffic and speed on these roads have all but curtailed equestrian riding along most rural roads in the area.

2.3 Proposed System Development

The Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study was developed through a process that included input from City staff, local and regional agency staff, and the general public. Information was developed and presented in a series working papers that allowed decisions to be made by City staff and a Technical Advisory Committee (TAC) on how to close gaps in the existing system, improve existing deficiencies, and extend routes to new development areas. In addition, the working papers contained supplemental information that is necessary when competing for state and federal funding.

Local Government and Citizen Involvement

The TAC was formed and appointed by the City staff to provide input and review materials as part of the planning process. The TAC is comprised of staff members from local departments and agencies along with interested individuals from the community. It provided assistance to City staff in the development of goals, policies, and implementation programs for the planning process. Members of the committee are listed in Table 2 on the following page.

In addition to submitting materials for review by the TAC, working sessions and public workshops were held to allow members of the TAC and the public to comment on and refine the work products and discuss future steps in the process. Public input was encouraged throughout the process either directly with the planning staff or through the TAC working sessions. In addition, two public workshops were conducted to present preliminary findings, gain input, and collect comments and changes.

Table 2
ADVISORY COMMITTEE MEMBERS

Member	Group or Agency
Tim Boczanowski Kim McNeely	Livermore Valley Joint Unified School District
Russel Drobot	Chamber of Commerce Representative
Steve Fiala Robert Bouska	East Bay Regional Park District
Diana Gaines Larry Akinsiku	Alameda County Flood Control & Water Conservation District, Zone 7
Carol Garberson	Tri-Valley Trails
Steve Howard	Livermore Cyclery
Jerry Ingledue Felix Errico	Livermore Area Recreation and Park District
D'Anne Miller Ed Miller	Lawrence Livermore National Laboratory
Michael Tanner	Livermore Aamador Valley Transit Authority
Ken Craig	City of Livermore Planning Department
Susan Frost	City of Livermore Planning Department (Project Manager)
Dan Smith	City of Livermore Public Works Department
Lt. Larry Morrison	City of Livermore Police Department

2.4 Justification

Preparation of the Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study is one part of the local planning process being completed by the City of Livermore in coordination with the Livermore Area Recreation and Park District (LARPD), East Bay Regional Park District (EBRPD), Alameda County, and adjacent jurisdictions of Pleasanton and Dublin. The intent of the plan is to determine the existing and future trail and bikeway needs of the Livermore community and match these needs with a plan for development and management of physical improvements. Inherent to the plan are the environmental benefits of walking and bicycling such as reductions in gasoline consumption and air pollutant emissions. For example, in 1991 bicyclists and pedestrians saved the equivalent of up to 28.1 billion vehicle miles, 1,340 million gallons of gasoline, and 16.3 metric tons of pollutant exhaust in the U.S. These modes are a small but important part of the effort to address air quality, traffic congestion, and other environmental concerns in Livermore. This plan is consistent with local and regional transportation plans and supports on-going efforts

by local, state, and federal groups and agencies working to reduce dependency on the automobile and promote environmentally sensitive modes of travel. In addition, this plan also represents a part of Livermore's local responsibility to promote on-going interests in health and physical fitness and a trend towards running, bicycling, and other activities that require a linear corridor. Providing trails and bikeways are one part of a local commitment to improving the community's health.

3.0 PROPOSED SYSTEM

The proposed system of multi-use trails and bikeways connects major activity centers throughout Livermore and, it provides regional connections to other areas including Pleasanton, Dublin, Brushy Peak, Del Valle and Sycamore Grove Regional Parks, and Shadow Cliffs Regional Area. Figure 5 displays the proposed trail and bikeway system for the City of Livermore (see Figure 6 in the next section for specific equestrian trails).

The proposed system is made up of a hierarchy of designations including Class III bike routes, Class II bike lanes and multi-use trails (see Figure 2). The proposed system includes almost 178 total miles of multi-use trails and on-street bikeways as summarized in Table 3. The totals in Table I do not include about 24 miles of long-term multi-use trails, which are either not expected to be developed within the 20-year time frame of this plan or are outside of Livermore's jurisdiction and will require significant coordination among various local and regional agencies.

Table 3
PROPOSED TRAIL AND BIKEWAY SYSTEM (MILES)

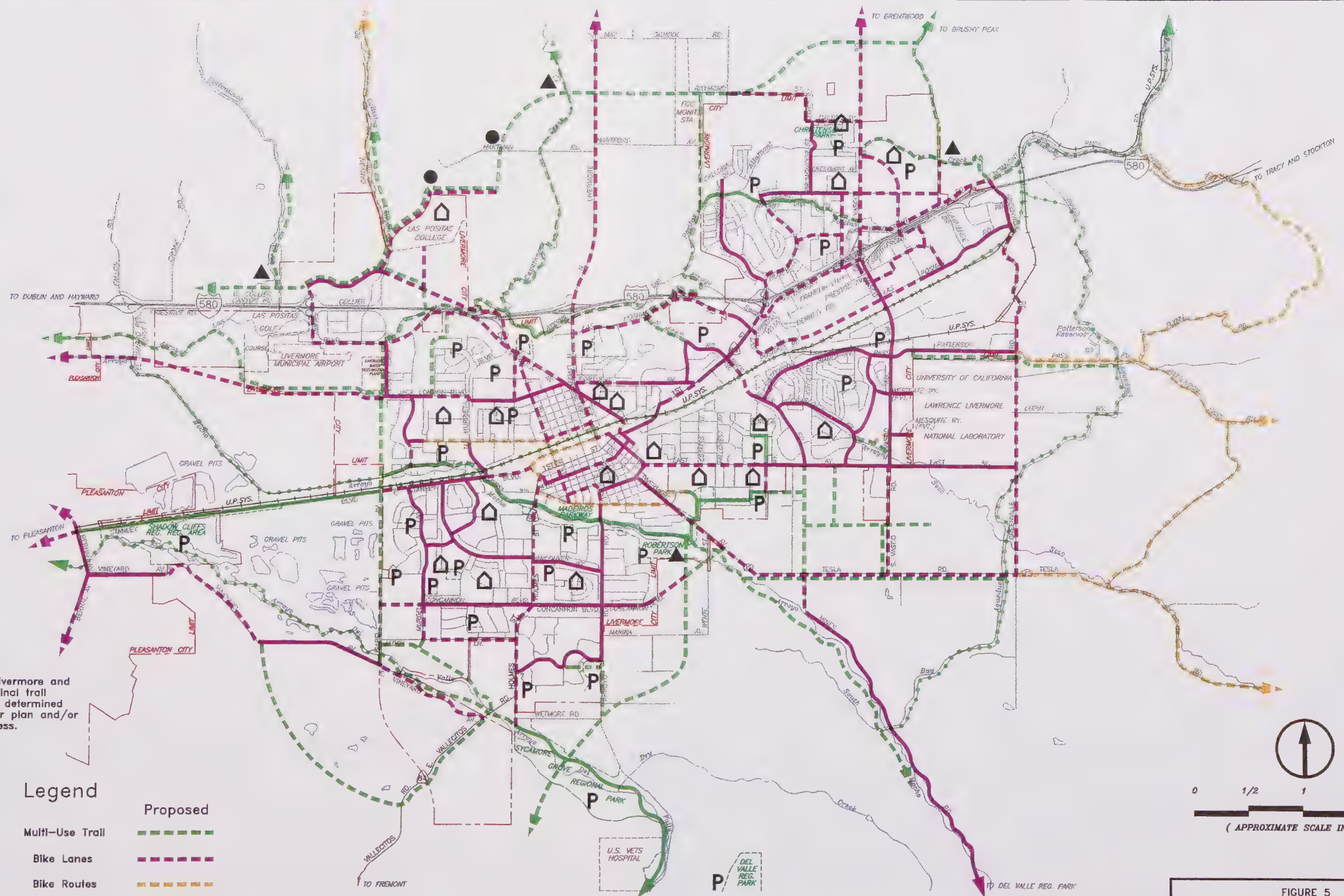
Classification	Multi-Use Trails ^{1,2}	Class II Bike Lane	Class III Bike Route	Sidewalk Bikeways	Total
Existing	13.9	38.5	0.5	0.8	53.7
Proposed	53.2	54.4	16.2	0.0	123.8
Total	67.1	92.9	16.7	0.8	177.5
Notes: ¹ Does not include 23.8 miles of long term bike paths.					
² Multi-use trails include Class I bike paths.					

The proposed system contains a substantial increase in Class II bike lanes as well as Class I bike paths (multi-use trails) over existing conditions. A review of the proposed system map reveals that the location of new routes is distributed evenly across the City with routes serving existing and planned development. More detailed discussion of individual routes is provided in Appendix A while the following discussion describes implementation priority and phasing.

3.1 Priority and Phasing

The specific implementation of any given route, with all other factors considered equal, should be based on the following criteria:

- 1) Where an opportunity, such as a road widening, repaving, or new development makes implementation favorable;



LIVERMORE BICYCLE/PEDESTRIAN PLAN UPDATE AND EQUESTRIAN TRAILS STUDY

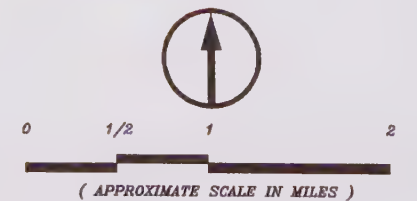


FIGURE 5

PROPOSED TRAIL AND BIKEWAY SYSTEM

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- 2) Where an eminent loss of an opportunity, such as the sale of a railroad right-of-way, makes implementation necessary;
- 3) Where resolution of a major obstacle, such as access to flood channel right-of-way, makes implementation necessary; and
- 4) The segment is connected or otherwise accessible from the rest of the system.

It is important to realize that in many situations the most popular or needed trail or bikeway improvement may not be implemented first because of opportunities created by external factors such as new road construction. Therefore, the proposed system does not include a definitive ranking of the specific routes, but it does identify the following improvements as having first priority for implementation (next five years).

Arroyo Mocho Trail - Holmes Street Undercrossing Improvements

Improve the undercrossing to provide year-round access, improved alignment, and meet ADA requirements. Improvements along Arroyo Mocho Trail will enhance the transportation/commuting and recreation use of the trail.

Arroyo Mocho Trail - Stanley Boulevard/Railroad Undercrossing Improvements

Improve the undercrossing to provide year-round access, improved alignment, and meet ADA requirements. Improvements along Arroyo Mocho Trail will enhance the transportation/commuting and recreation use of the trail.

Arroyo Las Positas - Springtown Boulevard to Las Colinas Road

Provide an off-street bikeway (Class I) and pedestrian trail along the arroyo. This connection provides an alternative to the First Street interchange for crossing I-580. Partial funding is available for this connection.

Airway Boulevard - Kitty Hawk Road to I-580

Provide bike lanes as part of planned roadway improvements. This segment provides access to Las Positas College north of I-580 and employment areas near the airport.

Jack London Boulevard - Curlew Road to North Murrieta Boulevard

Stripe bike lanes. Provide connection between Jack London Boulevard and Pine Street along North Murrieta Boulevard. This segment provides access to Rancho Las Positas School, Las Positas College and employment areas near the airport.

East Avenue - Maple Street to Madison Avenue

Study alternatives to providing bike lanes or bike routes. Conduct community outreach regarding possible removal of on-street parking and/or left turn lanes. This cross-town segment provides access to East Avenue Middle School, Livermore High School, Robertson Park and the Labs.

Third Street - L Street to South Livermore Avenue

Stripe bike lanes. Conduct community outreach regarding possible reduction or removal of on-street parking. Determine potential new off-street replacement parking area(s). This segment provides access to and through the downtown area.

Almond Avenue - Almond Avenue School to East Avenue

Stripe bike lanes. Although this is a local street, this segment connects the Quezaltenango Parkway with East Avenue and provides an alternative to East Avenue. Some widening of the road is needed and on-street parking would have to be prohibited.

Arroyo Seco - Charlotte Way to Vasco Road

Complete multi-use trail including bridge across arroyo and relocate access to Charlotte Way from Susan Lane. This segment provides access to local schools and the Labs. Provide bike route along Emily Way between the Arroyo Seco trail and the Vasco Road/Mesquite Way intersection.

4.0 PROPOSED EQUESTRIAN TRAILS

In the late 1980's, equestrian enthusiasts recognized the tremendous opportunity within the Livermore Valley for creating riding and hiking trails. Unsatisfied with having to either drive to local arenas, which allow for limited activity or driving long distances to access regional trails, these equestrians articulated the need for a trail system close to where people live. Two trail organizations formed, Citizens for Equestrian Trails and the Tri-Valley Trails Council, to promote their vision in the community and among the relevant public agencies for an equestrian trail system within and around the City.

In 1991, the LARPD developed a Trail Master Plan to guide development of a comprehensive trail system. The 1991 Trail Master Plan proposes regional trails connecting the valley's major parks and open spaces along creeks, ridgelines, and city streets. The following proposed LARPD trails were considered in the planning of equestrian trails within the city. Most of these trails have also been incorporated into East Bay Regional Park District's updated Trail Master Plan (1995).

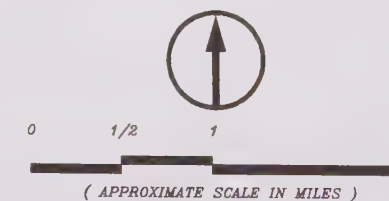
- Cayetano Creek Trail - If and when this area is developed, this trail could follow the existing creek and connect area residents to the proposed Arroyo Las Positas Trail.
- Arroyo Las Positas Trail - This proposed trail follows Arroyo Las Positas from Springtown to Kitty Hawk Road. The trail will provide off-street travel connections from Springtown to the trail along the extension of Isabel Avenue.
- Tesla Road Trail - The trail runs east-west following Tesla Road between Greenville Road and Robertson Park. Development of this proposed trail could occur within the road right-of-way or within adjacent private land pending cooperation with appropriate landowners.
- Robertson Park to Sycamore Grove - The trail would connect the two main equestrian parks in the area. Development of the trail could occur within existing road right-of-way and private land.
- Sycamore Grove to Shadow Cliffs - This trail follows the Arroyo Del Valle between two regional parks. The portion of the trail between Highway 84 and Arroyo Vallecitos is currently in the design and early construction process.
- Highway 84/Isabel Extension - The planned extension and widening of Isabel Road between Vineyard Avenue and Kitty Hawk Road will include development of a multi-use trail. Depending on available right-of-way and trail design standards an equestrian trail should be developed.

Figure 6 identifies those multi-use trail corridors where separate equestrian paths should be developed. However, equestrian use would not be precluded on other multi-use trails consistent with LARPD policy.

NOTE: In North Livermore and South Livermore, final trail alignments will be determined through the master plan and/or specific plan process.

Legend

- Existing Trail
- Proposed Equestrian Trails
- Riding Destinations
- Staging Areas



LIVERMORE BICYCLE/PEDESTRIAN PLAN UPDATE AND EQUESTRIAN STUDY

FIGURE 6

PROPOSED EQUESTRIAN TRAILS

fp Fehr & Peers Associates, Inc.
Transportation Consultants
Peter Bluhon, Landscape Architect

The selected equestrian routes represent a comprehensive trail network that is intended to achieve three principal goals, including:

- (1) Link the region's parks and equestrian facilities with safe, off-street trails.
- (2) Connect high density areas of equestrian stables and residential horse properties.
- (3) Link the outlying rural, natural areas to the inner circle of trails close to town.

The proposed equestrian trails take advantage of the Valley's arroyos, creeks, and existing public easements, which are currently closed to public use, to create a complete system providing a balance of natural and cultural landscapes.

5.0 GOALS AND POLICIES

This section contains goals, objectives, policies, and implementation programs that provide specific and clear direction on the necessary actions involved in planning, designing, funding and constructing trail and bikeway facilities. This particular approach relies on an understanding of the relationship between the proposed system, key issues facing implementation of specific routes, and the requirements of both local, state and federal funding programs.

To create a more user-friendly document, the goal and policy statements are organized by “topic areas” that relate to specific implementation issues. These topic areas include:

- Overall System;
- Regional Routes;
- I-580 Crossings;
- Downtown Livermore;
- South Livermore Valley;
- North Livermore;
- New Development;
- Equestrian Trails;
- Commuting;
- Safety Education;
- Environmental Considerations;
- Interagency Coordination; and
- Funding.

5.1 Topic Areas

The purpose of organizing this section by topic area is to provide users such as City staff, developers, planning commissioners, city council members, and citizens with clear and concise policy direction on how to implement the bicycle and pedestrian facilities proposed in this plan. In many cases, geographic location affects implementation (see Figure 7), but in other situations institutional arrangements or the preferences of local residents may play a greater role. Within each topic area addressed below, the reader will find an overall goal, measurable objective, policies with specific action statements, and implementation programs designed to assign responsibility for the development of specific facilities or programs.

Overall System

The following goal and policy statements express the philosophy behind this plan and the proposed system in particular. They stem from the City’s desire to provide citizens and visitors with a bikeway, pedestrian, and equestrian transportation system that can accommodate all trip purposes.

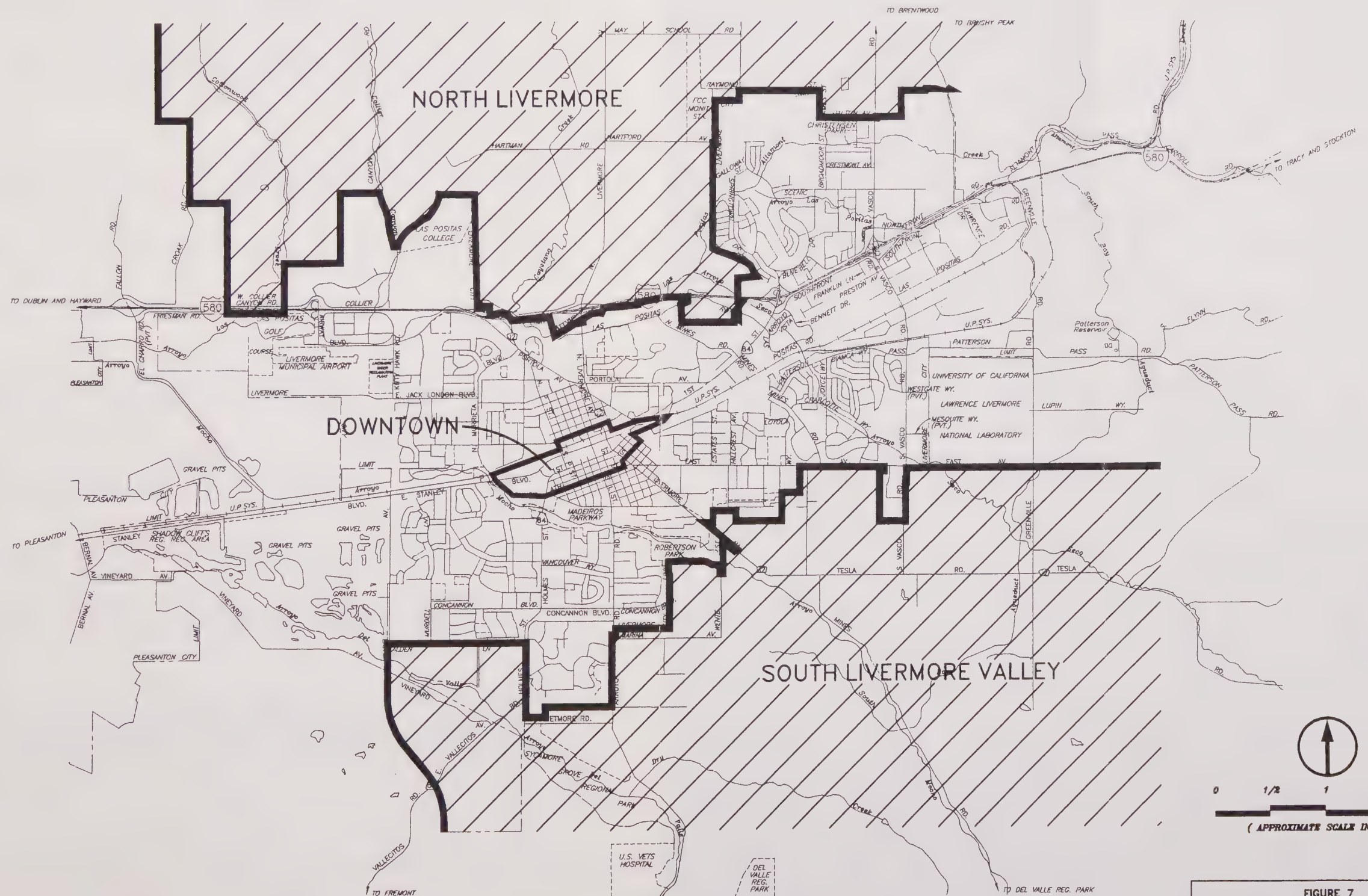


FIGURE 7
LIMITS OF
NORTH LIVERMORE, SOUTH LIVERMORE VALLEY & DOWNTOWN

Goal 1.0: Develop a comprehensive bikeway, pedestrian, and equestrian system as a viable alternative to the automobile for all trip purposes.

Objective: Construct new facilities identified in the proposed system and provide for the maintenance of both existing and new facilities.

Policies

- 1.1 Prepare and maintain a trail and bikeway plan that identifies existing and future needs, and provides specific recommendations for facilities and programs to be phased as development occurs in Livermore.
- 1.2 Emphasize Class I (bike paths) and Class II (bike lanes) over Class III (bike routes) wherever feasible.
- 1.3 Commit local resources towards implementation of the proposed system.

Programs

- 1.1 The City of Livermore shall appoint a bicycle coordinator responsible for overseeing implementation of the proposed system and the other programs identified in this plan or developed in support of increasing bicycle use.
- 1.2 The City of Livermore shall establish an advisory committee responsible for providing input on implementation priority for specific routes contained in the proposed system. This committee could also have other responsibilities as determined appropriate by the City of Livermore.
- 1.3 Upon adoption of this plan, the City of Livermore shall initiate efforts to acquire funding for the first priority projects.
- 1.4 The City of Livermore shall establish plan lines for multi-use trails contained in the proposed system in coordination with LARPD and EBRPD, where appropriate.

Regional Routes

The proposed system contains routes that extend outside the City of Livermore. These routes are shown because they provide connections to regional routes and destinations. It is the City's intent to provide local connections to these routes to improve local and regional travel. The City of Livermore's role in implementing these routes is defined by the goal and policy statements below.

Goal 2: Provide trail and bikeway users of all abilities with a high degree of mobility through Livermore and to connections with regional bikeways and trails.

Objective: Implement regional trail and bikeway facilities shown in the proposed system in a coordinated manner with local and regional agencies to improve overall system connectivity and success in receiving competitive funding.

Policies

- 2.1 Consider a proposed route's importance in providing access to regional trail and bikeway facilities when recommending local routes for implementation.
- 2.2 Encourage and support the construction of interregional trail and bikeway facilities shown on the proposed system. The City of Livermore, however, does not assume any responsibility for the cost of constructing or maintaining those facilities located in other jurisdictions.
- 2.3 Coordinate with agencies including, but not limited to, Alameda County, Zone 7, East Bay Regional Park District, and the Livermore Area Recreation and Park District regarding the implementation of the proposed system.

Programs

- 2.1 The City of Livermore shall review development plans for consistency with the proposed system as well as develop joint funding applications with other agencies for trail or bikeway facilities that cross jurisdictional boundaries.

I-580 Crossings

Providing improved crossings of I-580 for bicyclists, pedestrians and equestrians is one of the highest priorities of this plan. Currently, existing freeway crossings are constrained by narrow overcrossings that cannot accommodate bike lanes and often times have narrow sidewalks. The proposed system contains both new crossings as well as improved crossings at all existing interchanges. The implementation of these crossings should be guided by the following goal and policy statements.

Goal: Provide safe and efficient off-street and on-street crossings of I-580 that make logical connections to the proposed system.

Objective: Eliminate constraints to north-south bicycle, pedestrian, and equestrian travel across I-580.

Policies

- 3.1 Incorporate the on-street and off-street crossings of the proposed system in the re-configuration of the existing interchanges and the construction of new interchanges and overpasses.

Programs

- 3.1 The City of Livermore shall evaluate potential options for providing a bikeway and pedestrian crossing of I-580 at Vasco Road. If bike lanes and sidewalks cannot be adequately accommodated as part of the interchange reconfiguration, the City of Livermore should implement either a grade separated crossing at Central Avenue or Herman Avenue as shown in the proposed system.
- 3.2 The City of Livermore shall develop multi-use trail crossings of I-580 in the vicinity of Las Colinas Avenue and Isabel Avenue that will facilitate bicycle, pedestrian and equestrian use.

Downtown Livermore

Downtown Livermore presents a unique challenge for the development of bikeway facilities due to the need to provide on-street parking. In many cases, maintaining existing parking will prevent the installation of bike lanes. Therefore, the implementation of proposed Class II bike lanes in the downtown area will depend on the level of consensus reached with local business owners regarding the reduction, relocation, or elimination of on-street parking. This condition does not exist with pedestrian facilities given that the downtown area already has sufficient sidewalks and pedestrian access. Therefore, the following policy statements focus on the implementation of bicycle facilities in downtown.

Goal 4: Provide a high degree of access, safety, and mobility for bicyclists and pedestrians through the Downtown area.

Objective: Maximize the number of daily trips made by bicycling and walking in the downtown area.

Policies

- 4.1 Solicit public input, especially from downtown merchants and business owners, prior to constructing bikeway facilities in the Downtown area.

- 4.2 Incorporate concepts described in the Livermore Urban Design Implementation Program in the design of future bikeway and pedestrian facilities.
- 4.3 Encourage business owners in downtown Livermore to provide bicycle support facilities such as parking racks.
- 4.4 Provide support facilities such as bicycle parking racks, rest areas, water fountains, and public restrooms in the downtown area.

Programs

- 4.1 Bike lane construction on Third Street will require the elimination or reduction of on-street parking. Prior to the installation of bike lanes, the City shall consider input from Third Street business owners regarding the reduction or removal of on-street parking. If needed, off-street parking options should be considered.
- 4.2 Although Class III bike routes are proposed on portions of Railroad Avenue and P Street, Class II bike lanes are desirable. The City of Livermore should consider the installation of Class II bike lanes on these downtown streets if future changes in parking or travel lane width are proposed.
- 4.3 Although Class II bike lanes are proposed on Holmes Street between Arroyo Del Valle and First Street, this roadway currently experiences high traffic volumes and fairly high travel speeds. Four-foot bike lanes, which are the Caltrans minimum, could be accommodated within the existing 68-foot paved section of the roadway. The City of Livermore Public Works Department shall conduct additional engineering analysis to determine the best engineering method to accommodate the bike lanes.
- 4.4 The City of Livermore and the Redevelopment Agency shall work together to acquire the funding necessary to construct and maintain bicycle and pedestrian support facilities in downtown Livermore.

South Livermore Valley

Trail and bikeway facilities in the South Livermore Valley area are intended to facilitate local and regional travel. Local travel includes destinations such as wineries while regional travel includes major recreational destinations such as Robertson Park, Sycamore Grove Regional Park and Del Valle Regional Park. The City of Livermore's role in implementing new routes proposed for this area are specified in the goal and policy statements below.

Goal 5: Promote the South Livermore Valley as a premier wine-producing center and major recreational destination through the development of trail and bikeway facilities that provide both access to local destinations and mobility through the area.

Objective: Increase access and mobility opportunities for bicyclists, pedestrians, and equestrians in the South Livermore Valley area.

Policies

- 5.1 Require new development projects in South Livermore Valley to adhere to the policies listed below for new development.
- 5.2 Work closely with landowners in the South Livermore Valley as part of the specific plan process to improve connections to the proposed system as the area develops.

Programs

- 5.1 The City of Livermore shall review all development proposals for the South Livermore Valley to ensure that trail and bikeway routes are implemented as shown in the proposed system.
- 5.2 The City of Livermore shall assist other agencies, as appropriate, in determining the requirements of constructing a multi-use trail along the South Bay Aqueduct.

North Livermore

The proposed system contains facilities to accommodate bicycle, pedestrian, and equestrian travel in major corridors of the North Livermore Planning Area. These routes are intended to provide citywide circulation to key destinations such as Las Positas College and to regional routes and destinations. It should be noted, though, that the bikeway, pedestrian, and equestrian circulation systems will be integrated throughout the North Livermore Planning Area through the specific planning process.

Goal 6: Provide a comprehensive system of off-street and on-street facilities that is consistent with the North Livermore General Plan Amendment and will allow residents of North Livermore to bicycle, walk, or ride horseback to local and regional destinations on a daily basis.

Objective: Increase access and mobility opportunities for bicyclists, pedestrians, and equestrians within the North Livermore area and to other areas of the City.

Policies

- 6.1 Require the master plan/specific plans in North Livermore to adhere to the policies listed below for new development.
- 6.2 Work closely with landowners in North Livermore as part of the master plan/specific plan process to improve connections to the proposed system as the area develops.

Programs

- 6.1 The City of Livermore shall require specific plans for the North Livermore Planning Area to ensure that pedestrian routes are located along or are visible from streets--provide direct access to village centers--and include short paths where land uses prevent through streets.
- 6.2 The City of Livermore shall require specific plans for the North Livermore Planning Area to ensure that bikeway and pedestrian routes will link important destinations within the planning area and to areas south of I-580, including schools, parks, village centers, transit stops, employment areas, and other community facilities.
- 6.3 A plan for bikeway, pedestrian, and equestrian routes, which provides connections to major activity centers, shall be prepared by the City in conjunction with the LARPD and EBRPD prior to or in conjunction with the adoption of any Specific Plan within the planning area.
- 6.4 The Portola Avenue flyover shall be designed to accommodate bicycle and pedestrian travel. This connection will facilitate access to the Cayetano Creek Recreation Area, Las Positas College, the West Livermore BART station, and the western hillside area.
- 6.5 The Las Colinas Road overpass shall be designed to accommodate bicycle, pedestrian, and equestrian travel. This connection will facilitate access to the Cayetano Creek Recreation Area, Las Positas College, the West Livermore BART station, and the western hillside area.

New Development

As new development occurs in the City of Livermore, individual projects should be reviewed to ensure consistency with the proposed system. In addition, new development should adhere to the policy statements below regarding access, mobility and support facilities for bicyclists, pedestrians, and equestrians.

Goal 7: Include trail and bikeway facilities in all new development projects to facilitate on-site circulation for non-motorized modes of travel, on-site bicycle parking, and connections to the proposed system.

Objective: Maximize the number of daily trips made by bicycling and walking in new development areas.

Policies

- 7.1 Require new development projects to reserve the right-of-way for multi-use trails shown in the proposed system.
- 7.2 Encourage new development to dedicate the right-of-way for multi-use trails and construct portions of the trail that cross the limits of the development site.
- 7.3 Coordinate with local and regional agencies such as Zone 7, the Department of Fish and Game, and the Livermore Area Recreation and Park District regarding the right-of-way needs for individual multi-use trails according to their location.
- 7.4 New development's Class II bike lanes or Class III bike routes that are shown in the proposed system shall be constructed along roadway frontage as part of required roadway improvements.
- 7.5 Encourage new commercial development to provide bicycle and pedestrian access to surrounding residential areas.
- 7.6 Encourage new commercial development to place required bike racks near entrances for employees and customers.
- 7.7 Consider landowner concerns when planning and acquiring trail easements.
- 7.8 Meet the requirements of the Americans with Disabilities Act during the construction of facilities contained in the proposed system, where applicable.
- 7.9 Encourage new development to consider schools as important destinations for bicyclists and pedestrians when designing paths and roadways within subdivisions and other development.
- 7.10 Incorporate concepts described in the Livermore Urban Design Implementation Program in the design of future bikeway and pedestrian facilities.
- 7.11 Require new development to be designed to promote and enhance access to adjacent multi-use trails.

Equestrian Trails

Many of the multi-use trails contained in the proposed system will accommodate equestrians. The following goal and policy statements are intended to ensure that the development of multi-use trails, which include equestrian facilities, will include adequate right-of-way, appropriate design features, and minimize environmental effects.

Goal 8: Develop an interconnected local and regional trail network that is safe and accessible for equestrians and other users of all abilities.

Objective: Increase riding opportunities for equestrians within and around the City of Livermore through implementation of the proposed system.

Policies

- 8.1 Coordinate with all water, school, flood control, transit, and park districts, and adjacent cities and counties to plan and implement equestrian trails.
- 8.2 Coordinate with LARPD and EBRPD, as appropriate, to ensure connections are made to planned regional equestrian trails.
- 8.3 Support and participate in, as necessary, joint-use agreements among other agencies to allow the implementation of equestrian trails and the management of such trails by LARPD or EBRPD, or other appropriate agency.
- 8.4 Periodically review and update the General Plan, as necessary, to ensure coordination and consistency in equestrian trail planning among the City, LARPD, EBRPD and other appropriate agencies.
- 8.5 Utilize existing trail easements and alignments, where possible.
- 8.6 Minimize the removal of native habitats, alterations to creeks and arroyos, and avoid excessive grading.

Programs

- 8.1 In designing multi-use trails, the City of Livermore shall separate equestrian trails from facilities designed for the exclusive use of bicyclists or pedestrians, where feasible.

Commuting

Commuters that walk or bicycle to work can represent a larger percentage of total commute trips if a comprehensive network of trail and bikeway facilities is developed. This plan proposes to implement such a system as defined by the following goal and policy statements.

Goal 9: Develop a trail and bikeway system that enhances safety and convenience of walking and bicycling to work and school as means to encourage the use of alternative transportation modes and improve air quality.

Objective: Increase the mode split for walking and bicycling to work and school.

Policies

- 9.1 Provide connections to the proposed system from all existing and future transit facilities, stations and terminals in Livermore.
- 9.2 Encourage employers to provide support facilities such as personal lockers and showers for employees that walk or bicycle to work.
- 9.3 Encourage employers to provide incentives for employees to bicycle or walk to work.
- 9.4 Encourage local and regional transit agencies to install bike lockers or secured bicycle parking at terminals and bike racks on all buses.
- 9.5 Connect employment areas with residential areas and regional routes.

Programs

- 9.1 Upgrade the Arroyo Mocho Trail undercrossings to improve the alignment, provide year-round access, and meet ADA requirements.
- 9.2 Complete cross-town connections, such as East Avenue and Third Street, which provide access between residential and employment areas of the City.
- 9.3 Bike lane construction on East Avenue, between Maple Street and Madison Avenue, will require elimination or reduction of on-street parking. Prior to the installation of bike lanes, the City shall consider input from East Avenue residents and business owners regarding the reduction or removal of on-street parking.

Safety Education

Safety education is an important aspect of getting more people to walk or ride bicycles. If residents perceive the trail and bikeway system to be unsafe, they will be discouraged from using it. Therefore, the following goals and policies are intended to improve people's knowledge of how to use the system safely.

Goal 10: Educate all residents of Livermore about how to use trail and bikeway facilities safely.

Objective: Improve bicycle and pedestrian facilities in Livermore to reduce accidents.

Policies

- 10.1 Play an active role in educating residents about bicycle and pedestrian safety in conjunction with public and private schools and civic organizations.
- 10.2 Develop multi-use trails that separate equestrians from pedestrians and cyclists by providing dual trails, where feasible.

Programs

- 10.1 The City of Livermore should monitor bicycle and pedestrian-related accident levels annually, and target a 10 percent reduction on a per capita basis over the next twenty (20) years.
- 10.2 The City of Livermore should continue to coordinate with the local school district on a comprehensive bicycle education program that is taught to all school children in Livermore. The City shall coordinate with Las Positas College on a bicycle education program available to adults.
- 10.3 The City of Livermore should monitor the maintenance of the on-street system. If needed, street sweeping on the major streets should be increased to keep the bike lanes and routes free of debris.

Environmental Considerations

Trail and bikeway facilities are generally considered to benefit the environment because their use reduces demand for motorized travel. Nevertheless, the construction of specific facilities may adversely effect the physical environment. The following goal and policy statements have been developed to avoid and minimize potential impacts to the environment.

Goal 11: Avoid adverse environmental impacts associated with the implementation of the proposed system.

Objective: Mitigate potentially significant impacts to a level of less than significant.

Policies

- 11.1 Avoid areas of sensitive habitats for plants and wildlife when constructing facilities contained in the proposed system.
- 11.2 Require all construction activity to adhere to the City's grading ordinance and other applicable construction regulations when constructing facilities contained in the proposed system.
- 11.3 Coordinate with resource agencies such as the California Department of Fish and Game when developing trails near riparian areas.
- 11.4 Solicit and consider community input in the design and location of bikeway, pedestrian, and equestrian facilities.
- 11.5 Consider the use of fences, setbacks, and buffers where bikeway, pedestrian, or equestrian facilities abut residential properties.
- 11.6 Implementation of the proposed trails and bikeways shall consider the affect on other transportation facilities such as travel lane widths, turn lanes, on-street parking, and on-site circulation.

Programs

- 11.1 The City of Livermore Planning Department shall coordinate the environmental review of specific projects with the Public Works Department prior to implementation.
- 11.2 The City of Livermore shall include the evaluation of trail improvements as part of the environmental reviews for roadway and interchange improvements, where applicable.
- 11.3 The City of Livermore shall conduct detailed environmental review of individual projects as they advance to the implementation stage of development.

Interagency Coordination

The City of Livermore is responsible for the construction and maintenance of the on-street bikeway system, which includes bike lanes and bike routes. The ownership and maintenance of multi-use trails, however, is divided between the City and LARPD. Completion of the proposed system will

require coordination among the City, LARPD, and, in some cases, EBRPD regarding the location of multi-use trails, transitions between multi-use trails and on-street bikeways, construction, ownership, and maintenance of the system.

Goal 12: Coordinate implementation of the proposed system with other affected agencies.

Objective: Avoid duplicative efforts in constructing and maintaining the proposed system.

Policies

- 12.1 The City of Livermore shall be responsible for the implementation and maintenance of the on-street bikeway system including bike lanes and bike routes. The City shall also be responsible for those portions of the multi-use trail system located within the public road rights-of-way.
- 12.2 LARPD, or other appropriate agency, shall be responsible for the implementation and maintenance of the multi-use trail system, including trail heads and staging areas, within the City.
- 12.3 Ensure connectivity between the on-street bikeways and multi-use trail segments of the existing and proposed system.

Programs

- 12.1 The City of Livermore shall work with LARPD to coordinate and resolve the maintenance and operation of the existing multi-use trails system within the City, such as Arroyo Mocho Trail and the Arroyo Las Positas Trail.
- 12.2 The City of Livermore shall work with LARPD on developing a cooperative agreement that outlines future responsibilities in the implementation and maintenance of the multi-use trail system.
- 12.3 The City shall prepare joint grant applications with LARPD and other appropriate agencies for state and federal funds, as appropriate.

Funding

Obtaining the funding required to implement the proposed system will require the City of Livermore to take advantage of funding sources at the state and federal level. It will also require a commitment of local funding. The role of the City in acquiring funding is defined below.

Goal 13: Acquire sufficient funding to construct the proposed system within the next 20 years.

Objective: Maximize the amount of local, state, and federal funding for non-motorized improvements that can be received by Livermore.

Policies

- 13.1 Maintain information on the regional, state, and federal funding programs, along with specific funding requirements and deadlines.
- 13.2 Encourage multi-jurisdictional funding applications for trail or bikeway facilities that cross jurisdictional boundaries.
- 13.3 Include trail and bikeway facilities in City's traffic impact fee program as a reasonable nexus is developed.
- 13.4 Include proposed trail and bikeway facilities in the City's Capital Improvement Program (refer to recommended priorities on page 13 and 14).
- 13.5 Establish a local funding source for bikeway, pedestrian, and equestrian facilities.

Programs

- 13.1 The City of Livermore shall investigate the feasibility of establishing a local funding source for bikeway, pedestrian, and equestrian facilities. This effort should be coordinated with LARPD and the EBRPD.
- 13.2 The City of Livermore bicycle coordinator shall apply for all reasonably attainable state and federal funds through competitive funding applications. These applications should rely on information contained in this Policy Document and the Background Report.

6.0 IMPLEMENTATION

Implementation of the proposed system will require funding from local, state, and federal sources and coordination with other agencies, not to mention residents and business owners in Livermore. To facilitate funding efforts, this section presents conceptual construction cost estimates for the proposed system along with a brief description of past expenditures for bikeway facilities. Recommendations are also included for increased coordination with other agencies to improve competitive funding applications and to identify specific implementation responsibilities for the proposed system. This section ends with a brief discussion of how this plan affects or is affected by existing plans, guidelines, and design standards for the City of Livermore.

6.1 Cost and Funding Summary

Table 4 contains a unit cost summary for bikeways and multi-use trails. These cost estimates are based on actual costs experienced in various California communities. However, they should be used only to develop conceptual construction cost estimates. More detailed estimates should be developed after preliminary engineering.

Table 4		
TRAIL AND BIKEWAY UNIT COST SUMMARY		
Facility	Estimated Cost Per	
	Mile	Kilometer
Class III Bike Route <ul style="list-style-type: none">signing, minor surface repair	\$1,000	\$600
Class II Bike Lane <ul style="list-style-type: none">signing, striping, minor surface repairsigning, striping, road widening¹	\$20,000 \$50,000	\$13,000 \$30,000
Class I Bike Path (Multi-use Trail) <ul style="list-style-type: none">rehabilitate or upgrade existing pathconstruct asphalt path on existing level embankment, or right of way, includes signing, stripingconstruct asphalt path on graded right of way, requires drainage and new sub-baseconstruct asphalt path within ungraded corridor, some retaining walls required	\$50,000 \$150,000 \$230,000 \$350,000	\$30,000 \$90,000 \$140,000 \$215,000
Notes:	¹ Contribution for roadway improvement projects (approx. 20%) of total cost.	

Using the cost information in Table 4, conceptual construction costs were developed for the proposed system. These costs are shown in Table 5 and include operating and maintenance cost estimates for the multi-use trails. Maintenance of on-street facilities is assumed to be included in the cost of street maintenance.

Table 5										
CONCEPTUAL CONSTRUCTION COST SUMMARY - CITY OF LIVERMORE PROPOSED SYSTEM										
Name	Jurisdiction	Net Route Length	Net Lane Length	Net Path Length	Total Length Rte+Lane+Path	Capital Cost			Total Cost	Annual O & M
						Routes	Lanes	Paths		
First Street	City of Livermore		1.0		1.0	\$0	\$20,000	\$0	\$20,000	\$0
Third Street	City of Livermore		0.3		0.3	\$0	\$6,000	\$0	\$6,000	\$0
Sixth Street	City of Livermore		0.3		0.3	\$0	\$6,000	\$0	\$6,000	\$0
Airway Boulevard (E)	City of Livermore		2.6		2.6	\$0	\$52,000	\$0	\$52,000	\$0
Alden Lane	City of Livermore		1.0		1.0	\$0	\$20,000	\$0	\$20,000	\$0
Almond Avenue	City of Livermore		0.2		0.2	\$0	\$4,000	\$0	\$4,000	\$0
Altamont Creek	City of Livermore			2.6	2.6	\$0	\$0	\$520,000	\$520,000	\$22,100
Ames Street	City of Livermore		0.2		0.2	\$0	\$4,000	\$0	\$4,000	\$0
Arlington Road/Colusa Way Trail	City of Livermore			0.9	0.9	\$0	\$0	\$180,000	\$180,000	\$7,650
Arroyo Del Valle	City of Livermore			1.5	1.5	\$0	\$0	\$300,000	\$300,000	\$12,750
Arroyo Las Positas Central	City of Livermore			1.7	1.7	\$0	\$0	\$340,000	\$340,000	\$14,450
Arroyo Las Positas Kitty Hawk Extension	City of Livermore			2.0	2.0	\$0	\$0	\$400,000	\$400,000	\$17,000
Arroyo Las Positas Pleasanton Connector	City of Livermore			1.0	1.0	\$0	\$0	\$200,000	\$200,000	\$8,500
Arroyo Las Positas Springtown Connector	City of Livermore			1.2	1.2	\$0	\$0	\$240,000	\$240,000	\$10,200
Arroyo Mocho	City of Livermore			0.3	0.3	\$0	\$0	\$60,000	\$60,000	\$2,550
Arroyo Road	City of Livermore			0.5	0.5	\$0	\$0	\$100,000	\$100,000	\$4,250
Arroyo Seco	City of Livermore			0.4	0.4	\$0	\$0	\$80,000	\$80,000	\$3,400
Buena Vista Trail	City of Livermore			0.6	0.6	\$0	\$0	\$120,000	\$120,000	\$5,100
Bluebell Dr	City of Livermore		1.2		1.2	\$0	\$24,000	\$0	\$24,000	\$0
Cayetano Creek	City of Livermore			2.8	2.8	\$0	\$0	\$560,000	\$560,000	\$23,800
Central Avenue	City of Livermore		0.7		0.7	\$0	\$14,000	\$0	\$14,000	\$0
Civic Center-Vasco Trail	City of Livermore			1.5	1.5	\$0	\$0	\$300,000	\$300,000	\$12,750
College Avenue	City of Livermore	1.2			1.2	\$1,200	\$0	\$0	\$1,200	\$0
Commerce Way	City of Livermore		0.2		0.2	\$0	\$4,000	\$0	\$4,000	\$0
Concannon Boulevard (E)	City of Livermore		0.4	0.4	0.8	\$0	\$8,000	\$80,000	\$88,000	\$3,400
Concannon Boulevard (W)	City of Livermore		0.4		0.4	\$0	\$8,000	\$0	\$8,000	\$0
Dalton Road	City of Livermore		0.5		0.5	\$0	\$10,000	\$0	\$10,000	\$0
East Avenue	City of Livermore		1.0		1.0	\$0	\$20,000	\$0	\$20,000	\$0
East Vineyard Avenue	City of Livermore		1.2		1.2	\$0	\$24,000	\$0	\$24,000	\$0
Emily Drive	City of Livermore	0.2			0.2	\$200	\$0	\$0	\$200	\$0
Greenville Road	City of Livermore		3.5		3.5	\$0	\$70,000	\$0	\$70,000	\$0
Herman Avenue	City of Livermore		1.0		1.0	\$0	\$20,000	\$0	\$20,000	\$0
Holmes Street	City of Livermore		2.6		2.6	\$0	\$52,000	\$0	\$52,000	\$0
Industrial Way	City of Livermore		0.4		0.4	\$0	\$8,000	\$0	\$8,000	\$0
Isabel Avenue	City of Livermore		1.3	9.2	10.5	\$0	\$26,000	\$1,840,000	\$1,866,000	\$78,200
Jack London Boulevard	City of Livermore		1.8	1.4	3.2	\$0	\$36,000	\$280,000	\$316,000	\$11,900
Las Positas Road	City of Livermore		2.8		2.8	\$0	\$56,000	\$0	\$56,000	\$0
Las Positas College Extension	City of Livermore		0.5		0.5	\$0	\$10,000	\$0	\$10,000	\$0
Laughlin Road	City of Livermore		0.5	1.1	1.6	\$0	\$10,000	\$220,000	\$230,000	\$9,350
Livermore Avenue (N)	City of Livermore		4.2		4.2	\$0	\$84,000	\$0	\$84,000	\$0
Livermore Avenue (S)	City of Livermore		1.0		1.0	\$0	\$20,000	\$0	\$20,000	\$0
Lorraine Road	City of Livermore			1.1	1.1	\$0	\$0	\$220,000	\$220,000	\$9,350
Mines Road	City of Livermore		0.3	0.5	0.8	\$0	\$6,000	\$100,000	\$106,000	\$4,250
Mines Road Utility Corridor	City of Livermore			1.1	1.1	\$0	\$0	\$220,000	\$220,000	\$9,350
Murdell Lane	City of Livermore		0.3		0.3	\$0	\$6,000	\$0	\$6,000	\$0
North Canyons Pkwy	City of Livermore		1.1	2.2	3.3	\$0	\$22,000	\$440,000	\$462,000	\$18,700
Northfront Road	City of Livermore		0.9		0.9	\$0	\$18,000	\$0	\$18,000	\$0
Old First Street	City of Livermore		0.2		0.2	\$0	\$4,000	\$0	\$4,000	\$0
Olivina Avenue	City of Livermore	1.1			1.1	\$1,100	\$0	\$0	\$1,100	\$0
P Street (N)	City of Livermore		0.8		0.8	\$0	\$16,000	\$0	\$16,000	\$0
P Street (S)	City of Livermore	0.3	0.4		0.7	\$300	\$8,000	\$0	\$8,300	\$0
Patterson Pass Road	City of Livermore			2.0	2.0	\$0	\$0	\$400,000	\$400,000	\$17,000
Pacific Avenue	City of Livermore	0.3			0.3	\$300	\$0	\$0	\$300	\$0
Portola Avenue	City of Livermore		1.3		1.3	\$0	\$26,000	\$0	\$26,000	\$0
Preston Avenue	City of Livermore		0.7		0.7	\$0	\$14,000	\$0	\$14,000	\$0
Ravenswood Park to Robertson Park	City of Livermore			3.5	3.5	\$0	\$0	\$700,000	\$700,000	\$29,750
Raymond Street	City of Livermore		0.8		0.8	\$0	\$16,000	\$0	\$16,000	\$0
Rincon Avenue	City of Livermore		0.5		0.5	\$0	\$10,000	\$0	\$10,000	\$0
Scenic Avenue	City of Livermore		1.0		1.0	\$0	\$20,000	\$0	\$20,000	\$0
South Vasco Road	City of Livermore		1.1	0.5	1.6	\$0	\$22,000	\$100,000	\$122,000	\$4,250
Southfront Road	City of Livermore		1.4		1.4	\$0	\$28,000	\$0	\$28,000	\$0
Stanley Boulevard (E) / Railroad Avenue	City of Livermore	0.7	0.8		1.5	\$700	\$16,000	\$0	\$16,700	\$0
Vasco Road	City of Livermore		2.5		2.5	\$0	\$50,000	\$0	\$50,000	\$0
Wisteria Way	City of Livermore		0.4		0.4	\$0	\$8,000	\$0	\$8,000	\$0
CITY OF LIVERMORE SUBTOTAL		3.8	45.3	40.0	89.1	\$3,800	\$906,000	\$8,000,000	\$8,909,800	\$340,000
Railroad ROW (long-term)	City of Livermore			7.3	7.3	\$0	\$0	\$1,460,000	\$1,460,000	\$62,050
CITY OF LIVERMORE LONG-TERM SUBTOTAL		0.0	0.0	7.3	7.3	\$0	\$0	\$1,460,000	\$1,460,000	\$62,050
TOTAL		3.8	45.3	47.3	96.4	\$3,800	\$906,000	\$9,460,000	\$10,369,800	\$402,050

Table 5 shows a total cost of \$8.9 million for constructing the proposed system in the City of Livermore (excluding long-term multi-use trails). Multi-use trails account for \$8.0 million of this total (about 90 percent) while on-street facilities represent about \$.9 million. If long-term trail facilities are included, the total system cost is \$10.4 million for the City of Livermore.

Implementation of the proposed system will rely on multiple funding sources with one of the largest contributors being new development. It is estimated that new development will construct up to 40 percent of the total system. In addition, many facilities will be constructed as part of roadway projects such as the Isabel Expressway. Therefore, the total cost for the City of Livermore would be closer to \$5.3 million over the next 20 years.

Past expenditures by the City of Livermore on trail and bikeway facilities are difficult to obtain because many improvements are included as part of other projects such as roadway widenings. Nevertheless, the City estimates a total expenditure of about \$81,000 over the past six years for bike lane striping. In addition, the City receives about \$32,000 annually from the state in the form of Transportation Development Act (TDA) funds that is available for bikeway or pedestrian improvements. According to City officials, additional funding applied to trails, bikeways and pedestrian-related improvements through other projects could push the total annual expenditures in excess of \$50,000. This would equate to a total of about \$1.0 million over the next 20 years.

With this continued level of investment, the City could not construct the entire proposed system over the next 20 years without additional resources. The following options will be considered by the City for fulfilling the funding necessary to complete the proposed system:

- Prepare joint applications with other local and regional agencies for competitive funding programs at the state and federal levels;
- Use existing funding sources as matching funds for state and federal funding, especially through the Intermodal Surface Transportation Efficiency Act (ISTEA);
- Include trail and bikeway projects in the City's traffic impact fee program; and
- Include proposed bikeways and trails as part of roadway projects involving widening, overlays, or other improvements.

The City should also take advantage of private contributions, if appropriate, in developing the proposed system. This could include a variety of resources such as volunteer labor during construction, which is becoming popular for recreational improvements, or monetary donations towards specific improvements.

6.2 Coordination With Other Agencies

During implementation of the proposed system, the City of Livermore should work closely with other local and regional agencies especially when applying for competitive funding. Trails or bikeways that cross jurisdictional boundaries should be considered opportunities for joint funding applications, which typically compete better than applications from individual jurisdictions.

Further, it is important to realize that development for many of the proposed system routes within the City of Livermore will involve coordination with Zone 7 and LARPD. The City currently has an agreement with Zone 7 that allows the City to utilize the Zone 7 alignments for recreation purposes. The ownership and maintenance of certain multi-use trails, however, is divided between the City and LARPD, such as the Arroyo Mocho Trail and the Arroyo Las Positas Trail. Therefore, the City and LARPD should develop an agreement on the specific responsibilities of each agency as it relates to the construction and maintenance of multi-use trails.

6.3 Amendments to Existing Plans and Standards

This update is intended to provide the information necessary to update existing plans, ordinances, guidelines, and standards of the City of Livermore. Specifically, this document is intended to replace the existing bikeway and pedestrian section of the City of Livermore General Plan. Other documents or standards such as the City of Livermore Zoning Ordinance do not necessarily have to be modified since the information contained in the Policy Document and the Background Report is intended to support implementation efforts for trail and bikeway facilities. It is also important to note that the design guidelines developed for the *Livermore Urban Design Implementation Program* have been incorporated into this plan by reference.

APPENDIX A

Individual Bikeway and Trail Descriptions

Off-Street Facilities

Over 40 miles of multi-use trails are proposed as part of this plan not including an additional 26 miles designated as long-term. Each major proposed multi-use trail is described below. Detailed design information in the form of project description sheets is provided in Appendix C for selected segments as indicated with an asterisk below.

Altamont Creek Multi-Use Trail

This pathway would extend along Altamont Creek from Vasco Road to Laughlin Road and terminate at the Southern Pacific Railroad trail. Much of this trail would be built as part of new development in the area.

Arlington Road/Colusa Way Multi-Use Trail *

This proposed multi-use trail between Jack London Boulevard and Airway Boulevard will provide access to the planned BART station from adjacent subdivisions.

Arroyo Del Valle Multi-Use Trail *

The existing paved trail extends the length of Sycamore Grove Park from the U.S. Veterans Hospital to Holmes Street. Another section is being proposed from East Vallecitos Road to Isabel Avenue. The proposed system will fill this existing gap and include an extension westward to Shadow Cliffs Regional Recreation Area when mining and reclamation operations permit.

Arroyo Las Positas/West Jack London Multi-Use Trail *

This proposed multi-use trail would extend from Pleasanton along Arroyo Las Positas to West Jack London Boulevard where it would continue directly east to Isabel Avenue. At Isabel Avenue the trail would turn northward back to Arroyo Las Positas before connecting to the proposed North Canyons Parkway Multi-Use Trail and also continuing along the north side of I-580 to an undercrossing and connection to an existing trail segment near Portola Avenue. The trail would be extended eastward under North Livermore Avenue and along the north side of a proposed shopping center to a connection to the North Mines Road trail. The Las Positas trail would follow on the north side of Las Positas Road to the Las Colinas Road Overpass, cross over I-580, and then connect to the Springtown neighborhood and existing pathway near Ponderosa Drive. A path currently exists from this point to Arrowhead Avenue. A new pathway would be constructed along the Arroyo to Central Avenue and to Vasco Road where it would connect with on-street bike lanes.

Arroyo Mocho Multi-Use Trail *

The existing Arroyo Mocho/Robertson Park multi-use trail serves as one of the centerpieces of Livermore's trail system. Future expansions to the west linking to Pleasanton require access through existing rock quarry operations and are identified as long term improvements. Expansions to the south and east along the Arroyo Mocho corridor to the future Concannon Boulevard extension are likely to occur sooner. Future expansions paralleling Tesla Road and Mines Road toward Del Valle Regional Park are largely dependent on the ability to gain access to private land and overcome environmental impacts to the riparian habitat.

Arroyo Seco Multi-Use Trail

A short section of multi-use trail is proposed along Arroyo Seco between Charlotte Way and Vasco Road. This trail would provide a direct connection to Lawrence Livermore National Laboratory via Class III bike routes on Emily Drive, which is located directly across the southern entrance to the Laboratory at Mesquite Way. This trail should be constructed on the north side of the Arroyo to make a direct connection to the Emily Drive bike route.

Buena Vista Multi-Use Trail

A multi-use trail is proposed parallel to Buena Vista Avenue extending southward from East Avenue near Charlotte Way to the Civic Center-Vasco Road Multi-Use Trail. This connection will serve new development in the area west of Vasco Road and south of East Avenue.

Cayetano Creek Multi-Use Trail

A proposed multi-use trail would follow Cayetano Creek from its confluence with Arroyo Las Positas near I-580 northward to the future Isabel Expressway and beyond.

Civic Center-Vasco Road Multi-Use Trail *

This proposed multi-use trail would extend from the Livermore Civic Center at the end of Pacific Avenue, loop around the Sunken Garden site (currently undeveloped), and connect with the existing Quezaltenango Parkway for several blocks through to Almond Park. A new section of bike path would be constructed from Almond Avenue east to the proposed Mines Road multi-use trail, and then continue eastward through vineyards and future development areas to just east of Vasco Road. This route would provide an effective alternative for some bicyclists to East Avenue, as well as serve major employment centers and several schools and parks. The feasibility of this pathway is dependent on gaining access through existing residences on Buena Vista Avenue and other local streets.

Collier Canyon and Cottonwood Canyon Multi-Use Trails

Consistent with the LARPD Master Plan, multi-use trails are proposed in both Collier and Cottonwood Canyons.

Isabel Expressway Multi-Use Trail *

A multi-use trail is proposed to be constructed along the future Isabel Expressway from Vineyard Avenue to the I-580 interchange. The pathway could include a hard surface for bicycles and an unpaved surface for equestrians, and will be constructed as part of improvements to Isabel Avenue. A major design consideration will be the over- or under-crossing of Stanley Boulevard, the railroad tracks, Arroyo Mocho, and I-580. The trail will be located on the east side of the expressway, and afford cross-town travel with minimal use of city streets. From Cayetano Creek to Vasco Road, a hard surface trail for bicycles and pedestrians will be provided.

Laughlin Road Multi-Use Trail *

A multi-use trail is proposed along Laughlin Road from the intersection with Altamont Creek northward towards Brushy Peak. It will also intersect with the east-west portion of the Isabel Multi-Use Trail.

Mines Road Utility Corridor Multi-Use Trail *

A multi-use trail is proposed along the existing utility corridor following Mines Road between East Avenue and Tesla Road. This trail will provide a direct off-street connection to the vineyards and recreational opportunities in South Livermore, as well as equestrian access to homes along Buena Vista Avenue.

North Canyons Parkway Multi-Use Trail *

The proposed multi-use trail that parallels North Canyons Parkway in northwest Livermore would eventually connect to Pleasanton and Dublin as this roadway is extended in the future. This connection to Pleasanton would provide a direct off-street path to Las Positas College via a connection to the Isabel Expressway Multi-Use Trail.

North Mines Road Multi-Use Trail *

A short multi-use trail is proposed along North Mines Road between Las Positas Road and Highland Street. This trail will provide a connection to the Las Positas Road Multi-Use Trail from existing Class II bike lanes on North Mines Road and Highland Street.

Patterson Pass Road Multi-Use Trail *

This proposed multi-use trail would parallel Patterson Pass Road beginning just east of Vasco Road, following an alignment along the northern border of the Lawrence Livermore National Laboratory. The pathway would intersect the Class II bike lanes on Patterson Road at the South Bay Aqueduct.

Robertson Park - Sycamore Grove Trail

One of the highest priorities for trail users was a connection between Robertson Park and Sycamore Grove Regional Park, especially for equestrians. Much of the land between these parks is privately-owned, undeveloped, and being studied as part of the South Livermore Area Specific Plan. Many potential corridors have been discussed for this trail, with the ultimate corridor being dependent on the specific development scenario that evolves out of the Specific Plan process. Corridors and improvements that have been discussed include a grade separated crossing of the future Concannon Boulevard extension, an alignment on Wente Street or through adjacent vineyards, an alignment on the back side of current residences that feed off of Edward Avenue and Reed Avenue, an alignment on the east side of Arroyo Road, and an alignment following the old tree-lined entrance road from Wetmore Road/Arroyo Road into Sycamore Grove Park.

Long Range South Bay Aqueduct Trail (County)

The South Bay Aqueduct trail would serve as an important part of an eventual loop trail around Livermore, providing both a recreational and commuting alternative to using city streets. The trail would be located on the existing aqueduct maintenance road, generally on the west or north side of the channel. The trail would start in Altamont Pass where a connection to the Southern Pacific Railroad trail and Altamont Creek trail would be made. The trail would extend southward past Patterson Reservoir, through Sandia National Lab property, and then loop in a westward direction through vineyards to Mines Road. The path offers unparalleled views of Livermore and surrounding vineyards, all on a ready-made level pathway. Feasibility questions include addressing the concerns of the aqueduct owners, including liability, safety, and security. Fencing may be required to protect people from the steep channel walls, although an independent study should be conducted on this subject.

Southern Pacific Railroad Multi-Use Trail

A long-term multi-use trail through the heart of Livermore is proposed that would provide bicyclists and pedestrians accessibility to downtown and other major employment and recreational activity centers. The Southern Pacific Railroad trail would utilize the abandoned Southern Pacific Railroad alignment directly adjacent to the active Union Pacific mainline from Isabel Avenue on the west to the South Bay Aqueduct/Altamont Creek on the east. Major issues include (a) safety and accessibility due to the Union Pacific railroad tracks, (b) property acquisition and availability, and (c) crossings of several major streets. The pathway alignment is reasonably well preserved except for a section directly east of Greenville Rd. The right-of-way through Altamont Pass would be a major regional route connecting Livermore and the Bay Area both to the Central Valley and to the Brushy Peak area.

Tesla Road Multi-Use Trail (County)

This trail is proposed to be constructed on the south side of Tesla Road between the Arroyo Mocho trail and the South Bay Aqueduct. The trail would be directly adjacent to the roadway and vineyards, and serve as an off-street connection to several wineries in the vicinity as part of a winery trail system.

On-Street Facilities

On-street bikeway facilities proposed for Livermore are predominately Class II bike lanes. Class III bike routes (signs only) are proposed only in those locations where Class II bike lanes are not feasible due to constraints such as narrow travel lanes or the presence of on-street parking. The descriptions below are intended to provide general information about the location, extent, and purpose of each proposed route. For selected facilities, the description also includes a discussion of implementation constraints.

First Street

No bikeway facilities are proposed on First Street between P Street and Old First Street. Another short section of Class II bike lanes, however, is proposed just south of Portola Avenue to close the existing gap between Old First Street and Portola Avenue. North of Las Positas Road, Class II bike lanes are also proposed on First Street up to Bluebell Drive. This last extension will require widening along First Street especially across the interchange with Interstate 580 (I-580). The widening is expected to occur when the interchange is reconfigured to accommodate future traffic levels.

Third Street

Class II bike lanes are proposed between M Street and South Livermore Avenue to close an existing gap and provide a continuous east-west bicycle connection through downtown Livermore. Installation of the bike lanes would require either changing the existing on-street diagonal parking to parallel parking or removing on-street parking. Input from local business owners is needed prior to making any changes in parking.

Sixth Street

An important east-west connection through downtown Livermore is proposed along the combination of Sixth Street, L Street, and Seventh Street. On Sixth Street, Class II bike lanes are proposed between P Street and L Street.

Airway Boulevard

Class II bike lanes are proposed along Airway Boulevard from Kitty Hawk Road to North Canyons Parkway. This route provides an important crossing of I-580 and is one potential travel path to Las Positas College. It is important to note that the proposed bike lanes should be included in the plans to reconstruct the Airway Boulevard interchange with I-580.

Alden Lane

Class II bike lanes are proposed between Murdell Avenue and Holmes Street (SR 84) on Alden Lane. This connection provides access to Jack Williams Park as well as future north-south routes that connect to downtown Livermore (Holmes Street) and to the Arroyo Del Valle multi-use trail.

Almond Avenue

Almond Avenue would provide a bikeway connection via Class II bike lanes between East Avenue and the Quezaltenango Parkway. This short connection allows cyclists to travel from Civic Center Park to Robert Livermore Park and provides an alternative to East Avenue west of Almond Avenue. Bike lanes along this street will require the prohibition of on-street parking.

Ames Street

Proposed Class II bike lanes on Ames Street would connect the existing bike lanes on Broadmoor Street to future bikeway facilities on Raymond Street that will extend beyond the current terminus of Raymond Street via the Isabel Expressway Multi-Use Trail to Las Positas College on the west side of Livermore. Therefore, this short section of proposed bike lanes provides an important future connection to the overall bikeway system.

Bluebell Drive

This north-south roadway is proposed to have Class II bike lanes between Scenic Avenue and Springtown Boulevard. Installation of the bike lanes in combination with bike lane improvements on 1st Street will provide a direct connection into downtown Livermore from Springtown.

Carroll Road (County)

Class III bike routes are proposed on Carroll Road between Altamont Pass Road and Flynn Road. Carroll Road is a key link in a loop route that would extend from Altamont Pass Road to Flynn Road and then Patterson Pass Road where cyclists could access numerous routes into or around Livermore.

Central Avenue

Central Avenue provides a parallel route to the heavily travelled Vasco Road corridor. At a minimum, Class II bike lanes are proposed on Central Avenue between Scenic Drive and the proposed multi-use trail along Arroyo Las Positas. An optional extension of bike lanes on Central Avenue would extend from Arroyo Las Positas to Southfront Road, which could include a bicycle and pedestrian overpass of I-580 just west of Vasco Road. This option is included in the plan in the event that bike lanes across the Vasco Road interchange are not possible.

Chestnut Street

Chestnut Street borders the residential neighborhoods just north of downtown Livermore on the north side of the railroad tracks. Proposed Class II bike lanes between P Street and North Livermore Avenue provide access to bikeway facilities extending into downtown Livermore.

College Avenue

College Street currently has insufficient pavement to accommodate travel lanes, bike lanes, and on-street parking. It is desirable for this roadway to have Class II bike lanes, however, at this time Class III bike routes are proposed between North Livermore Avenue and 4th Street. Installation of Class II bike lanes would require modification of on-street parking and existing travel lane widths.

Collier Canyon Road

Collier Canyon Road currently provides access to Las Positas College and is used by recreational cyclists. Therefore, Class II bike lanes are proposed from North Canyons Parkway to the Las Positas College entrance, past which, Class III bike routes are proposed into Contra Costa County.

Commerce Way

Class II bike lanes are proposed across the Vasco Road overcrossing of I-580 when the interchange is reconstructed. In the event that bike lanes across the interchange are not acceptable, one option for providing bicycle and pedestrian access across I-580 is to develop an underpass connection that uses the existing culvert between Northfront Road and Southfront Road just east of Vasco Road. Under this option, Commerce Way would be used to provide a Class II bike lane connection to Preston Avenue. From Preston Avenue, cyclists could access Las Positas Road or Vasco Road via Industrial Way.

Concannon Boulevard

Concannon Boulevard currently has Class II bike lanes between Altair Street and Arroyo Road. Bike lanes are proposed along the planned extensions of Concannon Boulevard to Isabel Avenue and South Livermore Avenue. Once completed, this route will accommodate continuous east-west bicycle travel across the southern half of Livermore.

Cross Road (County)

Although outside the City limits, Class III bike routes are proposed on Cross Road as part of an on-street system of facilities surrounding the Lawrence Livermore National Laboratory. Cross Road provides a connection between Patterson Pass Road and Tesla Road, which combined with South Vasco Road or Greenville Road provide recreational loops around the Laboratory.

Dalton Road

Class II bike lanes are proposed on Dalton Road between Vasco Road and Ames Street to provide an east-west connection that will eventually provide on-street access to the Isabel Expressway Multi-Use Trail.

East Avenue

Existing Class II bike lanes on East Avenue stretch from Madison Avenue to Greenville Road with the exception of a short segment between Buena Vista and Research Drive, which is temporarily signed as a Class III bike route. This roadway is widely used by bicycle commuters from Lawrence Livermore National Laboratory and Sandia National Laboratory. Given the level of bicycle demand on this roadway, it is desirable to continue the existing bike lanes on East Avenue into downtown Livermore. Since installation of bike lanes west of Madison Avenue will require the elimination of on-street parking or turn lanes at intersections, the ultimate decision to implement bike lanes on this section of East Street will require input from residents and users of East Avenue.

East Vineyard Avenue/Vineyard Avenue

Class II bike lanes are proposed on Vineyard Avenue to close the gap between the existing bike lanes in Pleasanton and the bike lanes just west of the Livermore city limits that currently terminate at Isabel Avenue. In Livermore, bike lanes are proposed on East Vineyard Avenue from the current termination of the County's bike lanes at Isabel Avenue to East Vallecitos Road (State Route 84).

East Stanley Boulevard

An extension of the existing Class II bike lanes on East Stanley Boulevard is proposed from Murdell Avenue to Isabel Avenue to tie into the existing multi-use trail along the south side of Stanley Boulevard that connects Livermore and Pleasanton. As part of this extension, crossing protection at Isabel Avenue will need to be considered for bicyclists transitioning between the bike path and bike lanes.

Class II bike lanes are also proposed on East Stanley Boulevard between Murrieta Boulevard and Railroad Avenue in order to provide continuous travel into downtown Livermore. A short section of Class III bike route between Railroad Avenue and 1st Street would complete this connection.

Emily Drive

Class III bike routes are proposed on Emily Drive, which would provide a direct connection to the Lawrence Livermore National Laboratory from the residential area just west of the lab via a proposed multi-use trail along Arroyo Seco.

Greenville Road

Greenville Road currently has Class II bike lanes that extend from Altamont Pass Road to Las Positas Road. As part of this plan, these lanes would be extended south on Greenville Road to Tesla Road. This route is currently used by cyclists from the Lawrence Livermore National Laboratory.

Herman Avenue

Class II bike lanes on Herman Avenue are proposed to extend from Northfront Road to Scenic Avenue and then continue northwest along a new roadway alignment (Garaventa Ranch Road) to Vasco Road. Although these bike lanes are intended to serve local demand, they could have regional significance if proposed bike lanes across the Vasco Road interchange are not acceptable. One option for providing bicycle and pedestrian access across I-580 is to develop an underpass connection that uses the existing culvert between Northfront Road and Southfront Road just east of Vasco Road. Under this option, Herman Avenue bike lanes would connect directly to this underpass.

Holmes Street

Although Class II bike lanes are proposed on Holmes Street between Arroyo Del Valle and First Street, this roadway currently experiences high traffic volumes and fairly high travel speeds. Four foot bike lanes, which are the Caltrans minimum, could be accommodated within the existing 68-foot paved section of the roadway. Four-foot bike lanes, however, may not appropriate for this roadway due to current speeds and volumes.

Before Class II bike lanes are installed on Holmes Street, additional engineering analysis will be required to determine the best engineering method to accommodate bike lanes. Potential treatments could include reducing median and travel lane widths if a reduction in traffic volumes occurs due to the development of the Isabel Expressway.

Industrial Way

Class II bike lanes are proposed across the Vasco Road overcrossing of I-580 and are expected to be installed when the interchange is reconstructed. In the event that bike lanes across the interchange are not possible, one option for providing bicycle and pedestrian access across I-580 is to develop an underpass connection that uses the existing culvert between Northfront Road and Southfront Road just east of Vasco Road. Under this option, Industrial Way would be used to provide a Class II bike lane connection from Vasco Road to Preston Avenue. From Preston Avenue cyclists could access the underpass via Commerce Way.

Jack London Boulevard

Proposed Class II bike lanes on Jack London Boulevard include the proposed extension to Pleasanton and the closure of an existing gap between Arlington Road and Murrieta Boulevard. Closure of the existing gap is important for providing east-west connectivity with existing bike lanes, which serve parks and schools in the surrounding area not to mention providing access to other bikeway facilities into downtown Livermore.

Las Positas Road

Las Positas Road currently extends from North Livermore Avenue to First Street and from Vasco Road to Greenville Road. Class II bike lanes are proposed along this roadway to provide access to commercial and employment areas.

Las Positas College Connection to North Canyons Parkway Extension

A new north-south roadway will provide access to Las Positas College from the North Canyons Parkway Extension. This new roadway will have Class II bike lanes. This connection offers more direct access to Las Positas College than is currently provided via Collier Canyon Road.

Mines Road

Class II bike lanes are proposed as part of the completion of Mines Road across the railroad tracks. Once completed, continuous bicycle travel on Mines Road will be possible from 1st Street to East Avenue.

North Canyons Parkway Extension

North Canyons Parkway is planned to be extended from Collier Canyon Road to Portola Avenue and from Airway Boulevard to Doolan Road. The connection to Portola Avenue will involve a reconfiguration of the existing Portola Avenue interchange with I-580 to include a flyover extension to North Canyons Parkway. Class II bike lanes are proposed along the full length of this new roadway.

North Livermore Avenue

Class II bike lanes are proposed along North Livermore Avenue from Railroad Avenue in downtown Livermore through the study area to the north. Although bike lanes are desired along this main entrance into downtown Livermore, the existing combination of travel lanes, turn lanes, and on-street parking does not provide sufficient space for the addition of bike lanes from Railroad Avenue to Portola Avenue. The interchange with I-580 also has a constrained overcrossing that would prevent the installation of bike lanes at this time.

Before Class II bike lanes are installed on these constrained sections of North Livermore Avenue, additional engineering analysis will be required to determine the best engineering method to accommodate the bike lanes. Potential treatments could include elimination of on-street parking or reducing the number of travel lanes.

Northfront Road

Northfront Road parallels I-580 between Vasco Road and Altamont Pass Road. Class II bike lanes are proposed along this section of roadway to provide connections to both local and regional bikeways and to facilitate crossing I-580.

Class II bike lanes are proposed across the Vasco Road overcrossing of I-580 and are expected to be installed when the interchange is reconstructed. In the event that bike lanes across the interchange are not possible, one option for providing bicycle and pedestrian access across I-580 is to develop an underpass connection that uses the existing culvert between Northfront Street and Southfront Street just east of Vasco Road. Under this option, Northfront Street becomes an important route for gaining access to the underpass.

Old First Street

Class II bike lanes are proposed on the short section of Old First Street between Junction Avenue and First Street. This connection provides direct access between downtown Livermore and residential neighborhoods north of downtown.

Olivina Avenue

Olivina Avenue is one of the direct east-west routes in central Livermore that provides access to a variety of land uses including residential neighborhoods, schools and parks. Although Class II bike lanes are the most desirable on-street bikeway facility, Class III bike routes are proposed on Olivina Avenue from Tanager Road to P Street. Installation of Class II bike lanes would require the removal of on-street parking, which is not considered feasible along this roadway.

P Street/North P Street

P Street is one of the major north-south connections into downtown Livermore for automobiles and bicyclists. For most of its length, P Street has Class II bike lanes proposed with the exception of a short section between Chestnut Street and First Street that is proposed for Class III bike routes. Installation of Class II bike lanes would require the removal of on-street parking, which is not considered feasible along this particular section of roadway.

Pacific Avenue

Class III bike routes are proposed on Pacific Avenue from South Livermore Avenue to Civic Center Park. Narrow travel lanes and on-street parking would prevent the installation of Class II bike lanes along this roadway.

Patterson Pass Road

Patterson Pass Road has existing Class II bike lanes from Mines Road to Greenville Road. Proposed Class III bike routes would extend east beyond Greenville Road intersecting with other bike routes on Flynn Road and Cross Road. The proposed bike routes would be part of a multiple loop system around the Lawrence Livermore National Laboratory that includes bikeway facilities on Cross Road, Tesla Road, Greenville Road, and South Vasco Road.

Portola Avenue

With proposed Class II bike lanes on Portola Avenue from North Murrieta Boulevard to Royal Road, Portola Avenue would have continuous bike lanes along its entire length. Bike lanes currently extend from 1st Street to Royal Road. With future changes to the local roadway system, cyclists will be able to use Portola Avenue to access Las Positas College via a flyover ramp of I-580 connecting with the North Canyons Parkway extension.

Preston Avenue

Class II bike lanes are proposed across the Vasco Road overcrossing of I-580 and are expected to be installed when the interchange is reconstructed. In the event that bike lanes across the interchange are not possible, one option for providing bicycle and pedestrian access across I-580 is to develop an underpass connection that uses the culvert between Northfront Street and Southfront Street just east of Vasco Road. Under this option, Preston Avenue would be used to provide a Class II bike lane connection from Commerce Way to Vasco Road and Las Positas Road.

Railroad Avenue

Through downtown Livermore, Class III bike routes are proposed along Railroad Avenue extending from East Stanley Boulevard to North Livermore Avenue. Existing travel lanes on Railroad Avenue are too narrow to accommodate Class II bike lanes. However, the City's preferred on-street designation is Class II bike lanes. Therefore, if future opportunities allow, bike lanes on Railroad Avenue should be constructed.

Raymond Street

Class II bike lanes are proposed on Raymond Street from Ames Street to the proposed multi-use trail along the Isabel Avenue Expressway alignment. This connection will provide Springtown area residents with a relatively direct route to Las Positas College.

Roadway Extensions to Las Positas College

Two future roadway extensions to Las Positas College are proposed to include Class II bike lanes. One of these new roadways will be a north-south connection from the planned extension of North Canyons Parkway. The other will follow an alignment just west and north of Las Positas College that will tie into the proposed multi-use trail along the planned Isabel Avenue Expressway.

Scenic Avenue

Proposed Class II bike lanes on Scenic Avenue will be an important east-west travel route for cyclists through the Springtown area. The proposed lanes will extend from Laughlin Road to Central Avenue where existing bike lanes currently exist on Scenic Avenue west to Bluebell Drive.

South Flynn Road/North Flynn Road (County)

Class III bike routes are proposed on South Flynn Road and North Flynn Road on the eastern edge of the study area. These bike lanes would connect to proposed bikeway facilities on Patterson Pass Road and Altamont Pass Road effectively creating a recreational loop via Greenville Road.

South Livermore Avenue

Existing Class II bike lanes on South Livermore Avenue extend from Fifth Street to the Arroyo Mocho Multi-Use Trail south of the Civic Center. Proposed Class II bike lanes include extensions up to Third Street in downtown Livermore and southeast to Tesla Road. Continuous bike lanes on North and South Livermore Avenue were not recommended because of the need to maintain current travel lane configurations between Railroad Avenue and Third Street.

Southfront Road

Southfront Road includes proposed Class II bike lanes between 1st Street and Vasco Road. It also includes Class II bike lanes on a short section between Commerce Way and an existing culvert near Herman Avenue that would be converted to an underpass of I-580 if bike lanes are not possible on the Vasco Road overcrossing.

Tesla Road (County)

Although outside the city limits, the proposed system includes Class II bike lanes on Tesla Road from South Livermore Avenue through the study area extending east of Cross Road. This is an interregional route that is also part of the recreational loops routes used by cyclists from the Lawrence Livermore National Laboratory.

Vasco Road/South Vasco Road

Existing bike lanes are present on South Vasco Road between East Avenue and Preston Avenue. Proposed Class II bike lanes are recommended across the interchange with I-580 extending north along Vasco Road through the study area, which is the most direct route to Brentwood. Class II bike lanes are also proposed on South Vasco Road from East Avenue to Tesla Road, which provides access to the Lawrence Livermore National Laboratory. Vasco Road/South Vasco Road also provide access to three schools and five parks that are located within a half mile of the roadway corridor.

Wisteria Way

Proposed Class II bike lanes on Wisteria Way would provide an east-west connection between the proposed bike lanes on Bluebell Drive and Central Avenue. This connection also serves Bill Clark Park.

APPENDIX B

Equestrian Trails Analysis and Proposed Trails Summary

B.1 EQUESTRIAN TRAILS NEEDS ANALYSIS

To identify current use patterns and demand for additional riding facilities and improvements among the equestrian community, a survey was distributed to equestrian stables throughout the Livermore area. A total of 73 equestrians responded as summarized in Table B-1 below.

Analysis of Overall Needs

The survey results and workshop comments indicate an overwhelming demand for trails connecting the area's existing and proposed regional parks. The trail segment with the highest demand among equestrians would connect Robertson and Sycamore Grove Parks. The second highest priority trail would connect Del Valle to Veteran's and Sycamore Grove Parks and eventually Shadow Cliffs Park. The third highest need is improved road shoulders along several key roads where equestrians would like to ride more often.

Analysis of Survey Results

Livermore provides a variety of riding venues from open parks to arenas, both private and public. Based on the survey, 93 percent of respondents ride for pleasure, usually on trails, between 6 and 15 times per month. Approximately 50 percent of respondents ride in arenas with the average frequency of 15 times per month. Long-distance riding accounted for 14 percent of riding types and carriage and other types were less than five percent. An important correlation in the survey is that almost all respondents want to ride for pleasure on trails and Sycamore and Del Valle were the highest used areas for riding.

Location of Stables and Horse Properties

According to the survey, 38 percent of respondents board their horses at their residential property. Due to the limited survey respondents, no particular area appeared where residential horse properties are grouped. Figure B-1 provides a conceptual view of where residential properties are found. (The diagram is based on drive-by surveys and does not suggest numbers of horses.) The critical pattern to note is that both commercial stables and residential properties are found in the south along the "arc" from Sycamore Grove to Tesla Road. In the north, the main pattern that affects trail planning is that many of the properties are north of the more dense neighborhoods closer to I-580.

Livermore features a large number of private stables where equestrians can board their horses (refer to Figure B-2). The majority of stables are distributed through the South Livermore Area in a gentle arc beginning at Sycamore Grove Park on the west, passing through Hansen, Marina, and Wentz street area in the middle, to Tesla Road on the east. North of I-580 there are several stables dispersed through the area between Livermore Avenue on the west and Vasco Road on the east. The total number of horses boarded at these stables ranges between 10 and 60 with the majority boarding between 10 and 20 horses (based on local survey by equestrians, 1991).

Table B-1
SUMMARY OF EQUESTRIAN TRAIL SURVEY RESPONSES

1. Do you own, lease, or borrow a horse(s)? Do you own a horse trailer?

92% Own 4% Borrow 6% Lease 34% Trailer

2. Where do you board your horse?

38% Home 56% Private or Commercial Stables
6% Other Location 12% (approx) North Livermore Area
88% (approx) South Livermore Area (25% Sycamore Stables, 12% Zumbach Ranch, 10% Tesla Rd.)

3. What kind(s) of riding do you most frequently do and with what frequency?

93% Pleasure/trail 6% Carriage/driving
50% Arena 7% Other (includes 3-day event, roping, polo)
14% Long-distance

4. If you ride in local or regional parks, what parks do you use?

45% Robertson 60% Del Valle
68% Sycamore Grove 27% Pleasanton Ridge
26% Other 38% Mount Diablo

5. Do you ride elsewhere?

31% Yes (Not all 73 respondents answered question.)
Places included: private ranch roads, stable arenas, wineries.

6a. Would you like to have greater equestrian access to the developed areas of Livermore?

75% Yes (Not all 73 respondents answered question.)

6b. If yes, list important trail riding destinations within and around the city of Livermore:

33% Sycamore Grove 16% Wineries
31% Del Valle Regional Park 5% Other
20% Robertson Park

6c. Are there any routes within the city that you think could be improved to accommodate equestrian use including shoulders of public roads?

High priority road shoulders recommended for improvement for equestrian use included: Arroyo Road, Tesla Road, Wetmore Road, and Marina Blvd.

7. List other equestrian riding needs or improvements needed in the Livermore Area.

Highest priority needs and improvements recommended included: more connector trails to local parks, water troughs and hitching posts, slower traffic on streets used by equestrians.

8. Is there anything else you would like us to know?

Main responses included: Livermore should continue to promote equestrian trails and activities; Robertson Park improvements are appreciated by equestrians.

B.2 PROPOSED TRAIL SUMMARY

Table B-2 lists each proposed trail along with a general description of the route, length, and a brief discussion of principal implementation measures necessary to create the trail. Where applicable the trail is cross-referenced with the LARPD 1991 Trail Master Plan trail code as so, “[E-3].” The “Priority ” designations are defined as follows:

- 1 - High Priority:

Potential trails are in public ownership and could be developed with appropriate funding and agency agreements within 1 to 5 years.

- 2 - Medium Priority:

Potential trails are in private or public ownership and could be developed within 5 to 10 years.

- 3 - Low Priority:

Potential trails are in private ownership and could be developed in 10 to 20 years.

- D - Dependent on private or public land improvements/developments:

The trail could be implemented in conjunction with development of a creek, road, or a housing development, for example.

**Table B-2
PROPOSED EQUESTRIAN TRAIL SUMMARY**

CODE	MILES	NAME	• DESCRIPTION (STATUS)	IMPLEMENTATION MEASURES	PRIORITY
E-1 [O1-3]	8 mi	Shadow Cliffs to Del Valle	<ul style="list-style-type: none"> Follows Arroyo Del Valle connecting four major parks. <i>(Land in commercial and agricultural ownership)</i> 	<ul style="list-style-type: none"> Shadow Cliffs to Hwy 84 requires long-term planning and negotiations with commercial landowners. Hwy 84 to Sycamore Grove is currently in planning stages by LARPD. Veteran's Park to Del Valle requires trail design and negotiations with institutional and private landowners. 	3 N/A 1
E-2 [N-2]	4 mi	Sycamore Grove to Robertson	<ul style="list-style-type: none"> Undetermined route using combination of road ROW and private land. <i>(Land in private ownership)</i> 	<ul style="list-style-type: none"> Requires long-term planning and negotiation with private landowners and South Livermore Specific Plan Committee. Public Works should identify potential road r-o-w's for trails. 	1
E-3	3 mi	Robertson Park to South Bay Aqueduct at Mines Road	<ul style="list-style-type: none"> Follows general course of Arroyo Mocho. <i>(Land is entirely in private ownership)</i> 	<ul style="list-style-type: none"> Requires long-term planning, feasibility study, and negotiations with landowners. 	3
E-4 [J1]	9 mi	Mines Road to I-580 at S. Bay Aqueduct	<ul style="list-style-type: none"> Follows existing service road adjacent to aqueduct. <i>(Land is in public ownership)</i> 	<ul style="list-style-type: none"> Requires agency agreements and negotiations with appropriate local agency and Department of Water Resources. 	3
E-5 [E2]	2 mi	Railroad Tunnel at I-580 to Laughlin Rd. via Altamont Creek	<ul style="list-style-type: none"> Begins where the S.Bay Aqued. trail joins the former railroad tunnel and follows Altamont Creek. <i>(Land is in private ownership. Creek improvements is under jurisdiction of Zone 7)</i> 	<ul style="list-style-type: none"> A trail facility would most likely occur as creek/flood control improvements are made to the creek as part of the development process. A majority of the lands adjacent to the creek are zoned for development. Requires future coordination with Zone 7 and City during design review of proposed developments. 	D
E-6	1.5 mi	Robertson Park to Almond Ave.	<ul style="list-style-type: none"> Trail to connect Robertson and Almond Parks and on to Tesla. <i>A portion of the trail exists along Quezaltenango Parkway. Remaining portion needs to be acquired\</i> 	<ul style="list-style-type: none"> Requires future inter- and intra-agency coordination to design the route when a future transportation facility extending Mines Road. 	D

[Bracketed items] reference trail codes in LARPD Trail Plan. Priority code: 1-High, 2-Med., 3-Low, D-Development-driven.

Table B-2
PROPOSED EQUESTRIAN TRAIL SUMMARY

CODE	MILES	NAME	• DESCRIPTION (STATUS)	IMPLEMENTATION MEASURES	PRIORITY
E-7 [F]	4 mi	Altamont Creek to Brushy Peak (future park)	• Undetermined route on west side and generally paralleling Laughlin Road (<i>Lands in private ownership</i>)	• Requires planing and negotiations with private landowners. • Portions of area may remain large parcel agriculture for the long-term.	D
E-8	7 mi	Laughlin Road to North Canyons Parkway	• A multi-use trail paralleling a proposed east-west arterial. (<i>Land now in private ownership and would be acquired as part of road development</i>)	• Requires future inter- and intra-agency coordination during planning, acquisition, and design of road and trail to assure that adequate r-o-w is acquired.	D
E-9 [G1-2, E1, E5]	7 mi	Central Ave. to Isabel Ave. via Arroyo Las Positas	• Follows A. Las Positas along existing (1 mi total) and potential future service roads or trails. (<i>Land in private ownership. Creek improvements under jurisdiction of Zone 7</i>)	• Requires inter-agency coordination with Zone 7 to plan and design creek improvements if/when development occurs. • Passage under I-580 using existing culvert may not be feasible and require construction of new culvert/overpass.	2
E-10 [C1]	2-5 mi	Cayetano Creek	• Follows creek along future trail/creek improvements. (<i>Land in private ownership. Future Creek improvements in Zone 7 jurisdiction</i>)	• Requires inter- and intra-agency coordination with City, Zone 7, and managing entity of trail to assure adequate right-of-way for equestrian trails.	D
E-11 [P]	4 mi	I-580 to Arroyo Del Valle via Isabel Avenue	• Follows future widened Isabel Ave. along a multi-use trail. (<i>Land is in City ownership</i>)	• Requires coordination with City and potential managing entity to determine appropriate design to accommodate equestrians.	1
E-12	1 mi	North Mines Road to Tesla Road	• Follows future improved road. (<i>Land in private ownership</i>)	• Trail will be implemented when roadway improvements are made.	D

[Bracketed items] reference trail codes in LARPD Trail Plan. Priority code: 1-High, 2-Med., 3-Low, D-Development-driven.

Table B-2
PROPOSED EQUESTRIAN TRAIL SUMMARY

CODE	MILES	NAME	• DESCRIPTION (STATUS)	IMPLEMENTATION MEASURES	PRIORITY
E-13 [M1]	3 mi	S. Bay Aqueduct to Robertson Park via Tesla Rd.	<ul style="list-style-type: none"> Follows either road shoulder or private property on south side linking aqueduct trail to the park. <i>(Land in private ownership and public ROW)</i>	<ul style="list-style-type: none"> Requires planning and negotiation with vineyard landowner. County Public Works needs to identify feasibility of using surplus r-o-w for trail. 	1
E-14 [M2]	2 mi	Robertson Park to Isabel Ave via Arroyo Mocho	<ul style="list-style-type: none"> Existing trail currently used by pedestrians and bicyclists. <i>(Existing public trail)</i>	<ul style="list-style-type: none"> Underpasses at Arroyo Rd. Holmes, and Stanley Blvd. are substandard for eq. use. Coordination between LARPD, Zone 7, and City is required to determine feasibility of lowering trail or raising overpass. Recently constructed segment (1994) west of Stanley underpass, does not allow for equestrian use. Requires modifications to trail surface and width to accommodate equestrian use. 	1
E-15	3+ mi	Isabel Ave. along A. Mocho	<ul style="list-style-type: none"> Follows A. Mocho along future trail and link to Iron Horse Trail in future. <i>(Land in private ownership)</i>	<ul style="list-style-type: none"> Requires long-term planning and negotiation with private landowners. 	3
E-16	3+ mi	Isabel Ave. to Arroyo Mocho along south border of airport and golf course	<ul style="list-style-type: none"> Follows border of city property and links to proposed A. Mocho trail. <i>(Land is in city ownership)</i>	<ul style="list-style-type: none"> Requires coordination with airport and golf course managers during planning and construction. 	2
E-17	2+ mi	Isabel Ave. extension to Dublin along future North Canyons Parkway	<ul style="list-style-type: none"> Follows future parkway along a multi-use trail within r-o-w. <i>(Portions of land in private ownership, would be acquired during road development)</i>	<ul style="list-style-type: none"> Requires future inter- and intra-agency coordination during planning, acquisition, and design of road and trail to assure that adequate r-o-w is acquired. 	D

[Bracketed items] reference trail codes in LARPD Trail Plan. Priority code: 1-High, 2-Med., 3-Low, D-Development-driven.

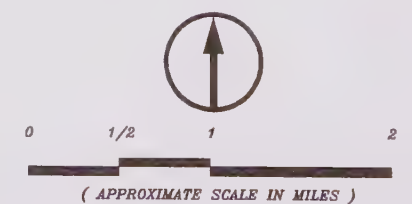
Table B-2
PROPOSED EQUESTRIAN TRAIL SUMMARY

CODE	MILES	NAME	• DESCRIPTION (STATUS)	IMPLEMENTATION MEASURES	PRIORITY
E-18 [A1]	4+ mi	Doolan Canyon/ Collier Canyon Loop	• Follows existing creeks and roadways. <i>(Land in private ownership and public ROW)</i>	• Requires long-term planning and negotiation with private landowners	3
E-19 [E1]	2+ mi	Southern Pacific Trail - County	• Follows abandoned railroad ROW. <i>(County and regional transportation agencies want to reserve this ROW for future potential light rail use. Development of light rail would not preclude implementation of a trail)</i>	• Requires inter- and intra-agency coordination with LARPD, EBRPD, and County and regional transportation agencies.	3
E-20	2 mi	Vallecitos /Ruby Hill Trail	• Undetermined route on south side of Ruby Hill development and east of Vallecitos Road. <i>(Land in private ownership and public ROW)</i>	• Requires planning and negotiations with private landowners.	2
E-21	6 mi	Southern Pacific Trail - City	• Follows abandoned railroad ROW. <i>(County and regional transportation agencies want to reserve this ROW for future potential light rail use. Development of light rail would not preclude implementation of a trail)</i>	• Requires inter- and intra-agency coordination with LARPD, EBRPD, and County and regional transportation agencies.	3

[Bracketed items] reference trail codes in LARPD Trail Plan. Priority code: 1-High, 2-Med., 3-Low, D-Development-driven.

APPENDIX C

Project Description Sheets



LIVERMORE BICYCLE/PEDESTRIAN PLAN UPDATE AND EQUESTRIAN STUDY

FIGURE C-1

PROJECT DESCRIPTION SHEET REFERENCE

1. **Segment Name:** Laughlin Road

2. **Description:**

This multi-use trail will parallel Laughlin Road on the west side of the street from Altamont Creek northward to the City limits. The trail will provide a connection between Livermore and regional recreational areas such as Brushy Peak. The multi-use trail will serve primarily pedestrians and equestrians on an 8-ft. wide asphalt surface and 6-ft. wide unpaved surface. On-street bike lanes are proposed along Laughlin Road between Northfront Road and the northerly City Limits. North of current City limits, the trail will become an unpaved hiking, equestrian, and mountain bicycling trail on its way towards Brushy Peak. The trails will be constructed when Laughlin Road is improved as part of future development.

3. **On LARPD Master Plan?** YES

4. **Cost Estimate:** \$220,000

5. **Length (Miles):** 1.1

6. **Phasing:** Constructed as part of roadway improvements.

7. **Trail Width:** (see cross section below)

8. **Used As Maintenance Road?** No

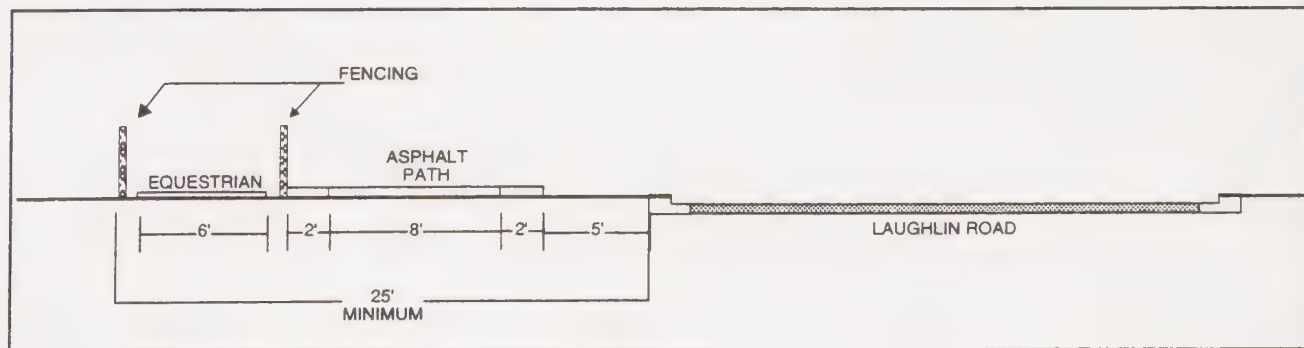
9. **Fencing Required?** Yes. Probably constructed as part of future residential projects.

10. **Roadway Crossings:**

Laughlin Rd.

Future local streets

11. **Map Reference:** A



1. **Segment Name:** Arroyo Las Positas (I-580 to Springtown)

2. **Description:**

This multi-use trail would connect the Springtown neighborhood and North Livermore to the rest of the City. The trail would start at the end of Las Colinas Road north of I-580, and extend across existing pasture land to the Springtown neighborhood. The preferred alignment would follow the Arroyo Seco and Arroyo Las Positas creeks and connect with an existing pathway near Ponderosa Dr. in Springtown. This alignment would require setbacks and protections from the riparian corridor, plus existing homes and ranch operations in the area. An extension would connect directly to Redwood Drive in Springtown. The trail would be multi-purpose and have an 8'ft.wide asphalt surface and 6'ft. wide unpaved surface for equestrians, and would require a short bridge over Arroyo Seco.

3. **On LARPD Master Plan?** YES

4. **Cost Estimate:** \$160,000

5. **Length (Miles):** 0.8

6. **Phasing:** This segment should be constructed in one phase.

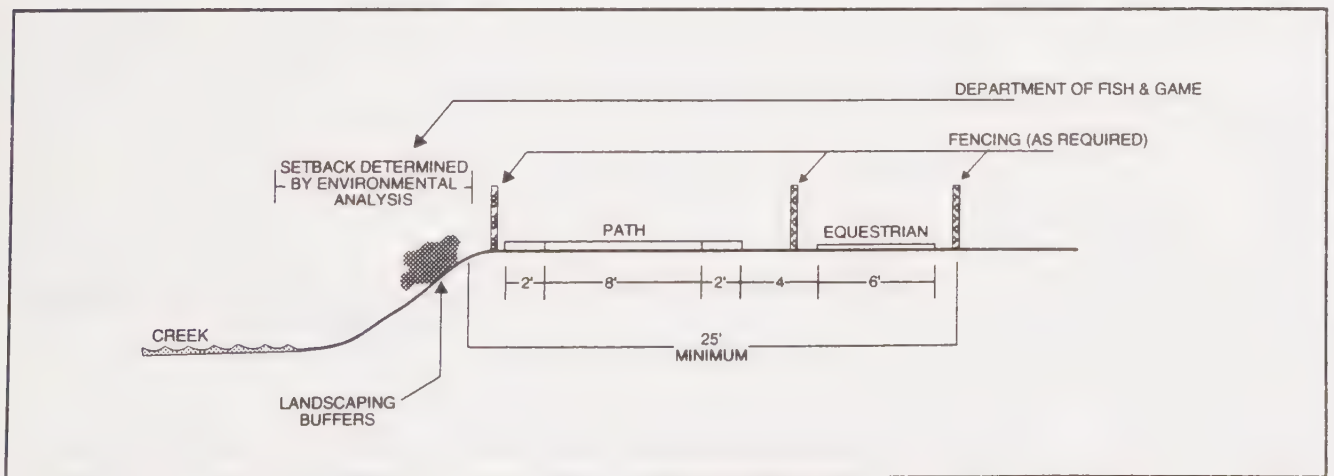
7. **Trail Width:** (see cross section below)

8. **Used as Maintenance Road?** Yes

9. **Fencing Required?** Yes (for ranching operations)

10. **Roadway Crossings:**
None

11. **Map Reference:** B



1. **Segment Name:** Arroyo Las Positas (N. Livermore Ave. to Las Colinas Rd.)

2. **Description:**

This bike and pedestrian path would start at the existing bike path terminus along Arroyo Las Positas just west of North Livermore Ave. and extend to the Las Colinas Rd. overpass of I-580. The path would serve as an important off-road facility in central Livermore. The 8-ft. wide asphalt path would be located on the south bank of the creek, cross N. Livermore Ave. at the signalized (future) eastbound ramps of I-580, and continue eastward along the creek behind a future commercial development to the intersection of Las Positas Rd. and North Mines Rd. The path would continue along the north side of Las Positas Rd. to the Las Colinas Rd. overpass as an 8-ft. wide asphalt path within a 20-ft. right of way.

3. **On LARPD Master Plan?** YES

4. **Cost Estimate:** \$340,000

5. **Length (Miles):** 1.7

6. **Phasing:** This segment should be built in one phase.

7. **Trail Width:** (see cross section below)

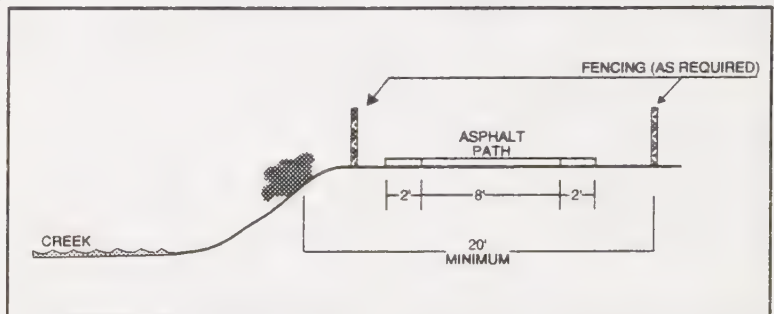
8. **Used as Maintenance Road?** Yes

9. **Fencing Required?** Along Creek

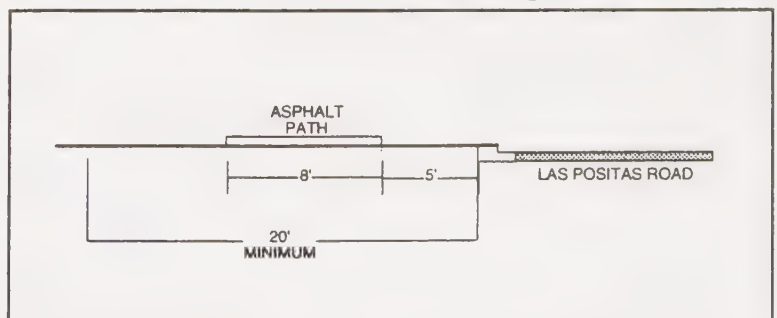
10. **Roadway Crossings:**
N. Livermore Ave. (future signal)
Las Positas Rd./N. Mines Rd.
(Use signalized intersection)
Las Colinas Road

11. **Map Reference:** C

1. Path Along Creek



2. Path Along Las Positas Road



1. **Segment Name:** Arroyo Mocho

2. **Description:**

This multi-use trail is completed between Rockrose St. north of Stanley Blvd. through central Livermore and Robertson Park to South Livermore Avenue. Several specific projects have been identified along this existing corridor for future improvements. First, two bridges are required to replace low flow crossings at Granada High School and in Robertson Park. Second, the undercrossings at Holmes and Stanley need improvements to horizontal and vertical geometries to meet bike path standards, which include a 4.8% maximum slope and a minimum height of 12 feet to accommodate equestrians (see cross section below). The equestrian trail could be placed apart from the bike/pedestrian path where necessary or desired.

3. **On LARPD Master Plan?** YES

4. **Cost Estimate:** (not available)

5. **Length (Miles):** (not applicable)

6. **Phasing:** First Priority

7. **Trail Width:** (not applicable)

8. **Used as Maintenance Road?** (not applicable)

9. **Fencing Required?** (not applicable)

10. **Roadway Crossings:**

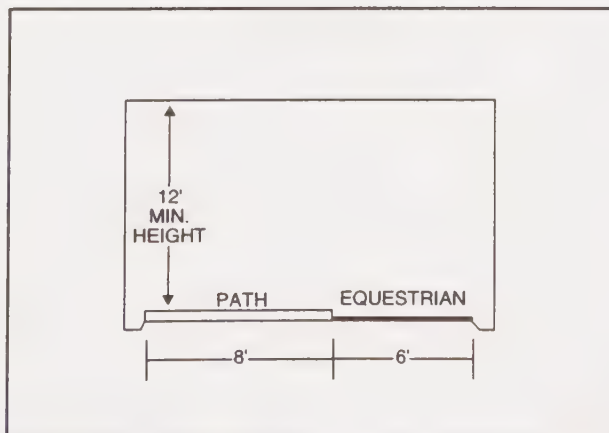
Stanley Blvd. (underpass)

Holmes St. (underpass)

Arroyo Rd. (underpass)

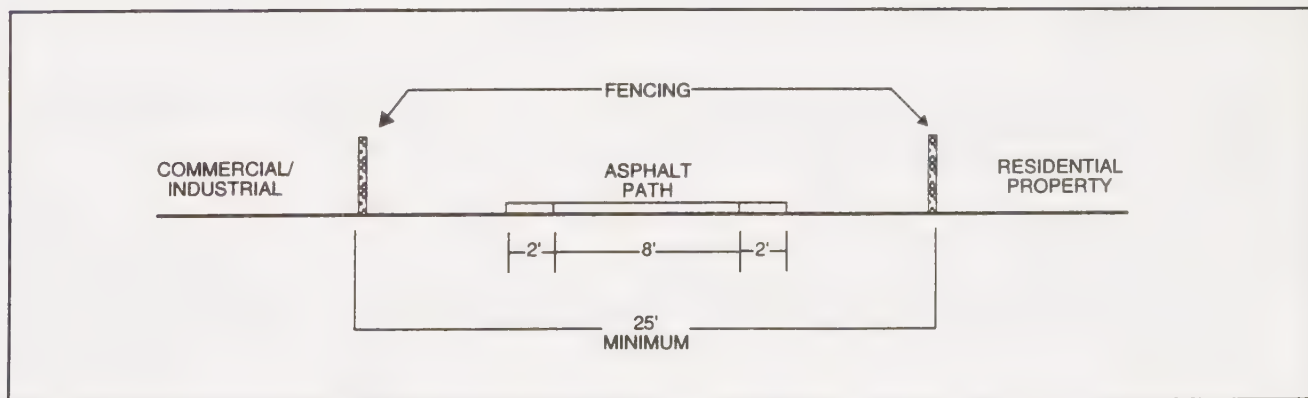
S. Livermore Ave. - unprotected

11. **Map Reference:** (not applicable)



1. **Segment Name:** Arlington Rd./Colusa Way
2. **Description:**

This bike path parallels Arlington Rd. and Colusa Way between Jack London Blvd. and E. Airway Blvd. in northwest Livermore, providing an off-road alternative to Murrieta Blvd. An 8-ft. wide asphalt path with two 2-ft wide pedestrian paths are proposed. Access to existing and future streets should be provided where possible, with at least two connections to neighborhoods on the east and one connection to the commercial/industrial area to the west.
3. **On LARPD Master Plan?** NO
4. **Cost Estimate:** \$180,000
5. **Length (Miles):** 0.9
6. **Phasing:** The segment would be built in one phase.
7. **Trail Width:** (see cross section below)
8. **Used As Maintenance Road?** No.
9. **Fencing Required?** Yes, probably built as part of future development.
10. **Roadway Crossings:**
None
11. **Map Reference:** I



1. **Segment Name:** North Canyons Parkway

2. **Description:**

This multi-use trail serving equestrians, bicyclists, and pedestrians will connect Livermore with the employment areas off North Canyons Pkwy.. and points west such as Dublin. Currently a 10-ft. paved meandering pathway is located on the south side of North Canyons parkway, and bike lanes are striped on-street. Future traffic demand will result in the loss of these bike lanes, which will be replaced by an additional off-street pathway on the north side of the street. The pathway will be constructed on the north side of North Canyons Pkwy. from the City limits east to a future connection near the Portola Ave. overcrossing. The path will connect directly to the Arroyo Las Positas pathway near the overcrossing, possibly following along I-580 and Collier Canyon Road.

4. **On LARPD Master Plan?** NO

5. **Cost Estimate:** \$440,000

6. **Length (Miles):** 2.2

7. **Phasing:** Portions of this pathway will be constructed as roadways are built or widened in the future, and as development occurs.

8. **Trail Width:** (see cross section below)

9. **Used As Maintenance Road?** No

10. **Fencing Required?** No

11. **Roadway Crossings:**

Doolan Rd.

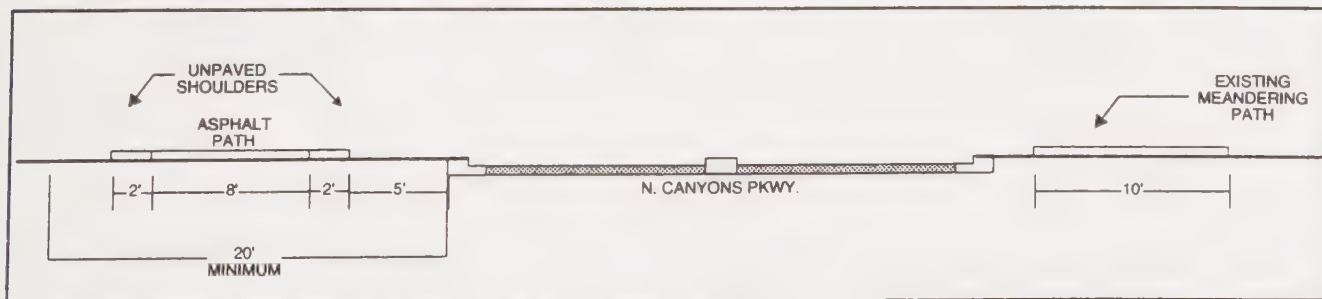
Airway Blvd.

Collier Canyon Rd.

Isabel Ave. Extension

12. **Map Reference:** F

Note: 25' landscape easments are located along the north & south sides of NCP. Construction of the trail will require coordination with the property owners.



1. **Segment Name:** West Jack London Blvd.

2. **Description:**

This multi-use trail parallels West Jack London Blvd. from Kitty Hawk Rd. (and future Isabel Extension) to the Las Positas Golf Course southern boundary. The trail makes an important connection to Pleasanton and is shown on the Community Trails Master Plan of Pleasanton (1993). The trail could be located on either side of Jack London Blvd., with the north side preferable from a functional standpoint.

4. **On LARPD Master Plan?** NO

5. **Cost Estimate:** \$280,000

6. **Length (Miles):** 1.4

7. **Phasing:** This segment should be phased in coordination with new development and be this first phase of the system to Pleasanton.

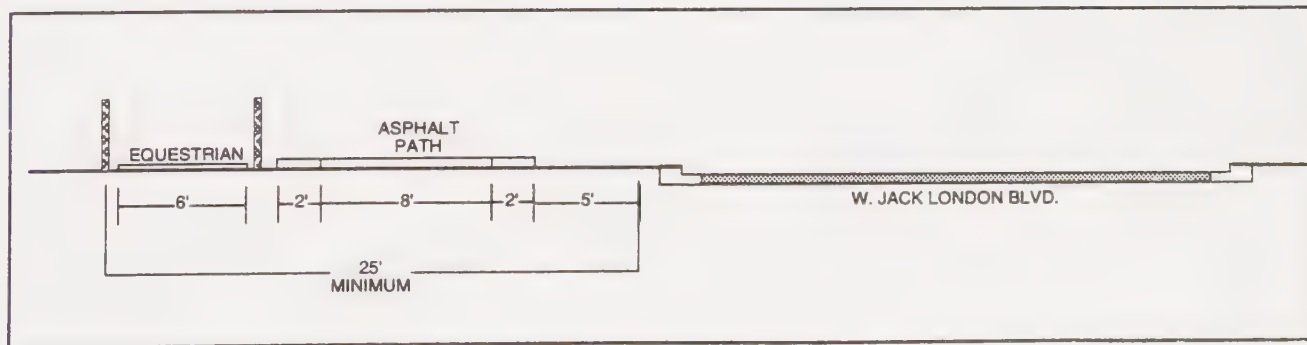
8. **Trail Width:** (see cross section below)

9. **Used As Maintenance Road?** No

10. **Fencing Required?** No

11. **Roadway Crossings:**
None

12. **Map Reference:** G



1. **Segment Name:** Isabel Extension

2. **Description:**

This multi-use trail will parallel the future Isabel Extension project from Vineyard Ave. in the south to Airway Blvd. in the north. It will serve as an important link in the future city loop system which provides an off-road recreation and transportation linkage for Livermore residents. The 10-ft. wide asphalt path and 6-ft. wide equestrian path will be located on the east side of the expressway, and will require special treatment at the crossing of Stanley Blvd. and future ramps. Trails will not be provided along Isabel between Airway Blvd. and Las Positas College due to concerns about high traffic volumes near the I-580 ramps. The trail will be routed along Las Positas Creek and cross I-580 at either an under- or overcrossing depending on the result of a more detailed study, in conjunction with design of the future Isabel/I-580 interchange. A separate crossing structure at I-580 is proposed.

3. **On LARPD Master Plan?** YES

4. **Cost Estimate:** \$520,000

5. **Length (Miles):** 2.6

6. **Phasing:** Constructed as part of future roadway projects.

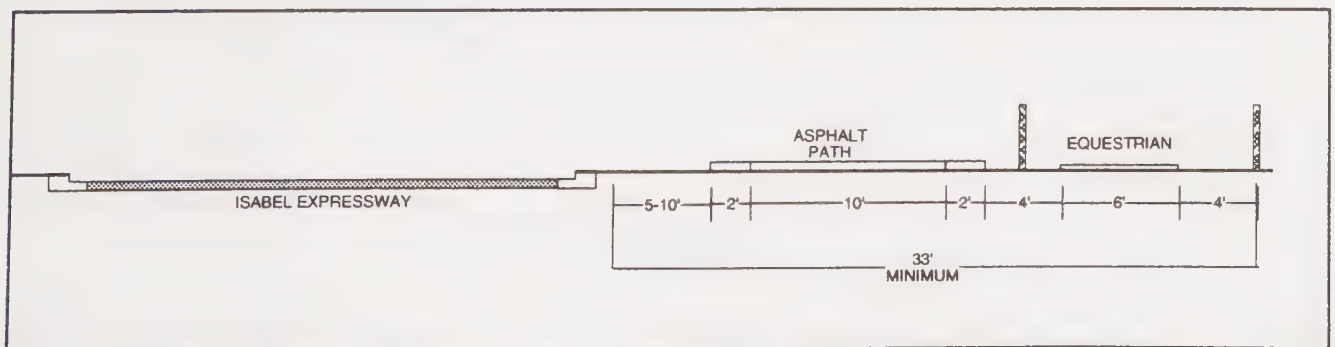
7. **Trail Width:** (see cross section below)

8. **Used As Maintenance Road?** No.

9. **Fencing Required?** Yes.

10. **Roadway Crossings:**
Concannon Blvd.
Stanley Blvd.
East Jack London Blvd.
East Airway Blvd.
I-580

11. **Map Reference:** H



1. **Segment Name:** Patterson Pass

2. **Description:**

This multi-use trail extends along the northern boundary of the Lawrence Livermore National Laboratory on the south side of Patterson Pass Road. The trail continues immediately south of Patterson Pass Rd. to the South Bay Aqueduct. The trail will serve as a commuter corridor to the Lab and recreational connector to the regional loop system along the aqueduct. Restricted right of way on this corridor may result in narrower facilities, such as a 6-ft asphalt bicycle path and a 4-ft wide unpaved equestrian surface. With bike lanes available on Patterson Pass Rd. the entire length of this corridor, it may be feasible to keep the off-road facility unpaved entirely.

3. **On LARPD Master Plan?** NO

4. **Cost Estimate:** \$420,000

5. **Length (Miles):** 2.1

6. **Phasing:** Segments should be built from west to east, with segment east of Greenville Rd. constructed last.

7. **Trail Width:** (see cross section below)

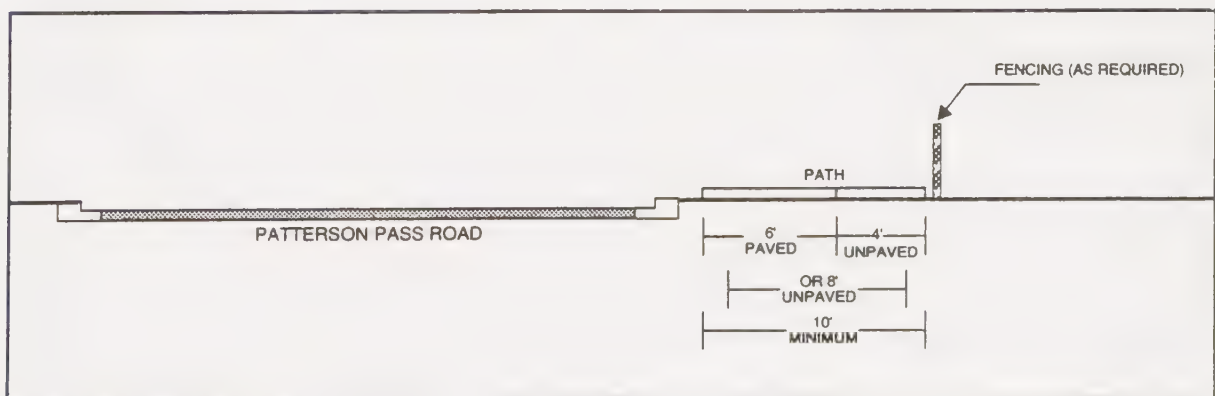
8. **Used As Maintenance Road?** Yes

9. **Fencing Required?** Some fencing exists; may require additional fencing.

10. **Roadway Crossings:**

Vasco Rd.
Patterson Pass Rd
Greenville Rd.

11. **Map Reference:** J



1. **Segment Name:** North Mines Road

2. **Description:**

This multi-use trail will parallel North Mines Rd. from Highland St. to Las Positas Rd. The 8-ft. wide asphalt path will be on the east side of the roadway and, due to the steep terrain, provide adequate warning to bicyclists as they approach the signalized intersection at Las Positas Rd.

3. **On LARPD Mater Plan?** NO

4. **Cost Estimate:** \$100,000

5. **Length (Miles):** 0.5

6. **Phasing:** The segment should be built in one phase.

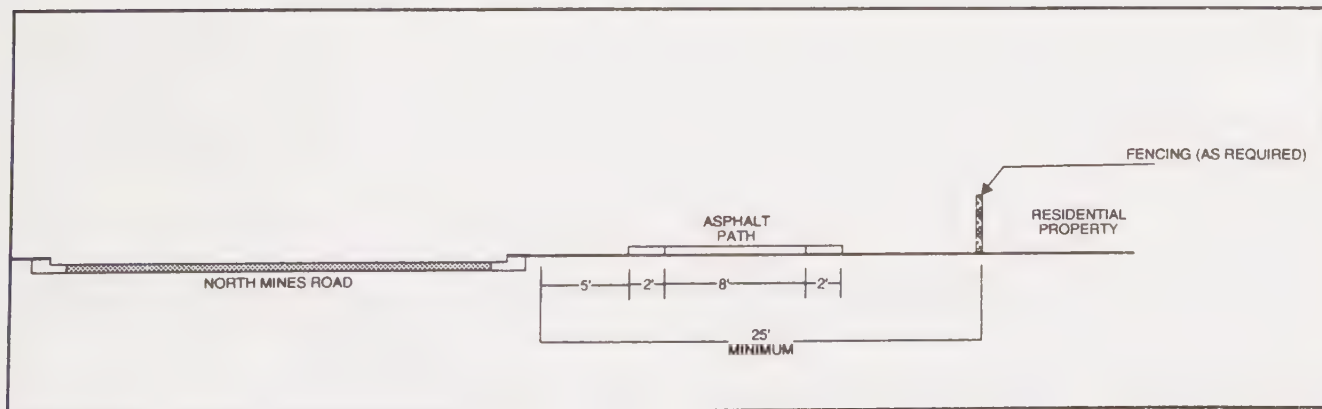
7. **Trail Width:** (see cross section below)

8. **Used As Maintenance Road?** No

9. **Fencing Required?** No

10. **Roadway Crossings:**
None

11. **Map Reference:** K



1. **Segment Name:** Arroyo Las Positas (Connection to Pleasanton)

2. **Description:**

This multi-use trail for pedestrians, equestrians, and bicyclists will connect with the proposed multi-use trail on West Jack London Blvd. which terminates on the southern boundary of the Golf Course, follows the perimeter of the golf course to Arroyo Las Positas, and then follows the channel west towards Pleasanton. Right of way restrictions may require a narrower cross section for portions of this path, from an 8-ft. asphalt path and 6-ft equestrian trail to an 8-ft asphalt path with two 2-ft unpaved trails on each side. Implementation issues include setbacks from the riparian corridor and integration into future development. The trail will most likely be constructed as part of future development. Joint applications for state and federal funding may be pursued with the City of Pleasanton.

3. **On LARPD Master Plan?** NO

4. **Cost Estimate:** \$200,000

5. **Length (Miles):** 1.0

6. **Phasing:**

The segment should be built after the portion on West Jack London Blvd. is completed, and in tandem with future development and improvements by the City of Pleasanton to its pathway in the same corridor.

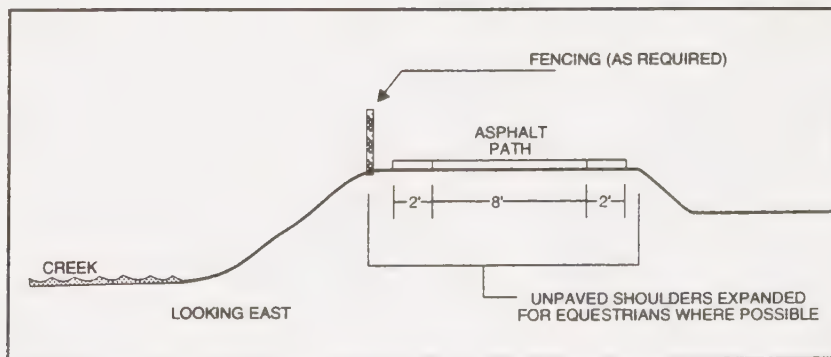
7. **Trail Width:** (see cross section below)

8. **Used As Maintenance Road?** Yes.

9. **Fencing Required?** Yes.

10. **Unprotected Crossings:**
None

11. **Map Reference:** E



1. **Segment Name:** Arroyo Del Valle Connector

2. **Description:**

This multi-use trail connects two existing trails along Arroyo Del Valle, and serves as an important gap closure in this regional recreational system. The trail will be designed to accommodate bicyclists, pedestrians, and equestrians, with an 8-ft. asphalt path and a 6-ft. equestrian trail. The trail extends along the arroyo from E. Vallecitos Rd. to Sycamore Grove Regional Park, across property which is privately owned. An easement will need to be negotiated with the owner, possibly as part of a future development proposal. If no easement is possible, it may be possible to construct the trail along E. Vallecitos and Holmes St. An undercrossing of E. Vallecitos may be feasible and preferable to an at-grade crossing.

3. **On LARPD Master Plan?** YES

4. **Cost Estimate:** \$60,000

5. **Length (Miles):** 0.3

6. **Phasing:** The segment should be built in one phase.

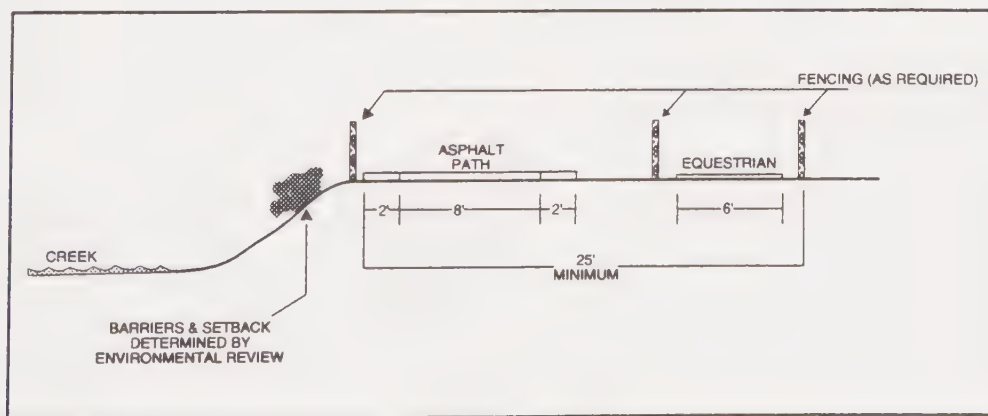
7. **Trail Width:** (see cross section below)

8. **Used As Maintenance Road?** Yes.

9. **Fencing required?** Yes.

10. **Roadway Crossings:**
E. Vallecitos

11. **Map Reference:** M

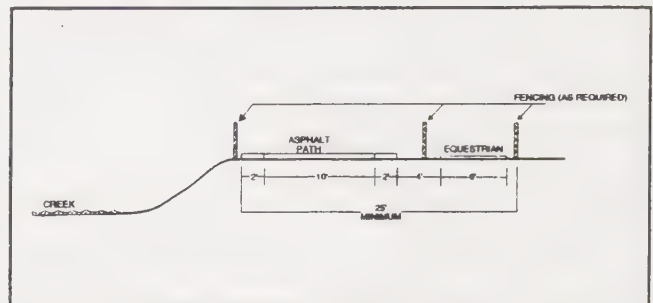


1. **Segment Name:** Arroyo Las Positas (Kitty hawk to Cayetano Creek)

2. **Description:**

This multi-use trail for pedestrians, bicyclists, and equestrians is a key part of the regional off-road loop system for Livermore, providing excellent access to regional employment and recreational destinations. The trail starts at the termination of the Isabel Extension at Jack London Blvd., follows Kitty hawk Rd. to East Airway Blvd., proceeds east to a crossing of I-580 and a connection to the North Canyons Parkway path, and then continues back across I-580 to the existing pathway near the Portola Overcrossing. The segment along Kitty Hawk Rd. should be constructed when the Isabel Extension is constructed, and should be located on the east side of the roadway at that time. The trail along East Airway Blvd. will be on the north side of the street with an 10-ft. wide asphalt bike path and 6-ft. wide equestrian trail. The location and type of crossing of I-580 should be identified in future studies. On the north side of I-580, the trail will intersect with a pathway connecting to North Canyons Parkway and Las Positas College. Continuing east, the multi-use trail will cross under I-580 directly east of the Portola Ave. overcrossing—this crossing should also be studied for feasibility.

1. Along the Creek



3. **On LARPD Master Plan?** YES

4. **Cost Estimate:** \$400,000 (excluding crossings)

5. **Length (Miles):** 2.0

6. **Phasing:**

The segment will be built as part of future transportation projects in the area.

7. **Trail Width:** (see cross section below)

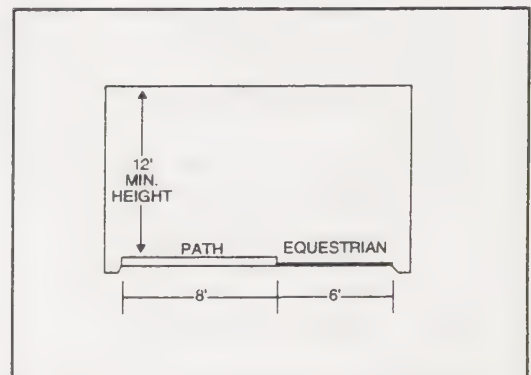
8. **Used As Maintenance Trail?** No

9. **Fencing Required?** No

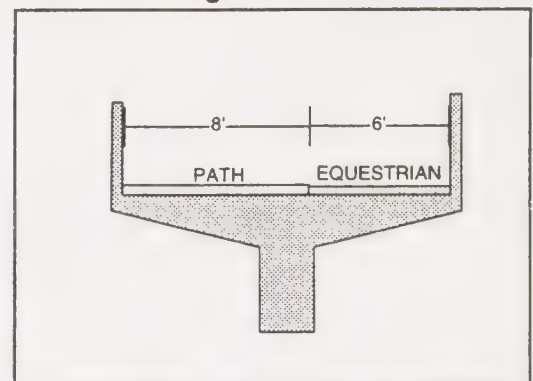
10. **Roadway Crossings:**
None

11. **Map Reference:** D

2. Undercrossing



3. Overcrossing



1. **Segment Name:** Civic Center-Vasco Road Multi-Use Trail

2. **Description:**

This multi-use trail will extend from the terminus of the existing path at Almond Avenue, eastward through existing low density residential neighborhoods across Buena Vista and then through existing vineyards just east of South Vasco Road. The purpose of this trail is to extend the existing off-street trail to Vasco Road to provide an alternative to the East Ave. bike lanes. The trail would have an 8-ft asphalt path with an adjacent 6-ft equestrian trail. The alignment from Almond Ave. to the vineyards east of Buena Vista Ave. may require the purchase of easements from private landowners. The segment between Buena Vista and Vasco Rd. would be located and constructed by future development in the proposed South Livermore Valley Specific Plan, but would follow the general route shown on the System Map.

3. **On LARPD Master Plan?** NO

4. **Cost Estimate:** \$420,000

5. **Length (Miles):** 2.1

6. **Phasing:**

Phasing is dependent on the timing of future development and ability to secure easements.

7. **Trail Width:** (see cross section below)

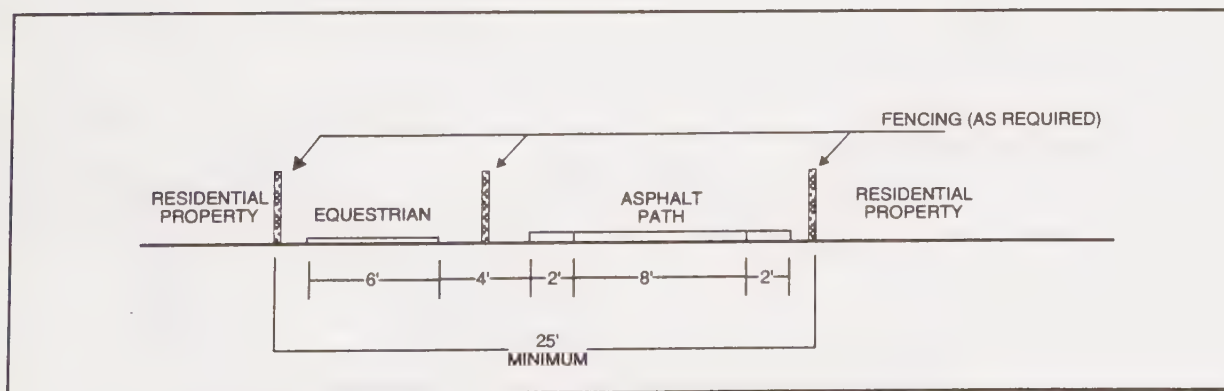
8. **Used As Maintenance Road?** No

9. **Fencing Required?** Yes.

10. **Roadway Crossings:**

Almond Ave.
Buena Vista Ave.
S. Vasco Rd.

11. **Map Reference:** L



1. **Segment Name:** Mines Road Utility Corridor

2. **Description:**

This multi-use trail will extend from the intersection of East Ave. and Mines Road South along the utility corridor to Tesla Road. The trail would have an 8-ft. asphalt path with an adjacent 6-ft. equestrian trail.

3. **On LARPD Master Plan?** NO

4. **Cost Estimate:** \$220,000

5. **Length (Miles):** 1.1

6. **Phasing:**

Phasing is dependent on the timing of future development and ability to secure easements.

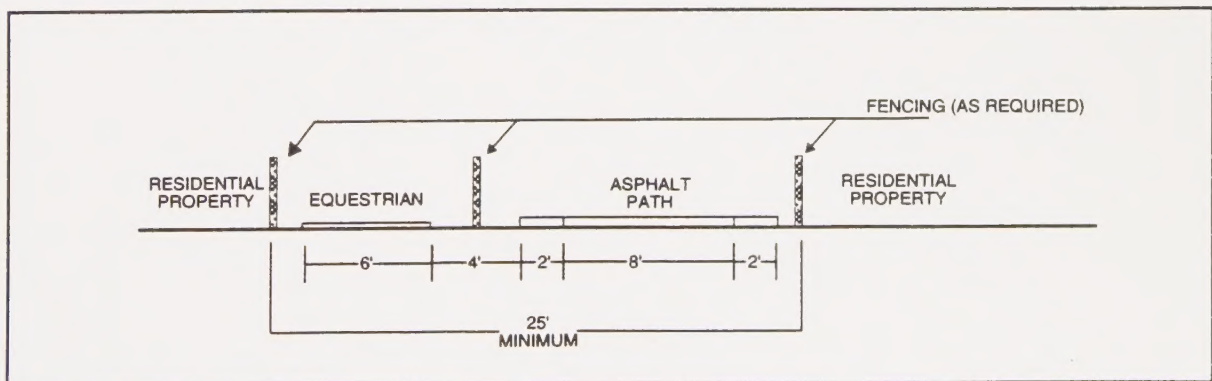
7. **Trail Width:** (see cross section below)

8. **Used As Maintenance Road?** No

9. **Fencing Required?** Yes.

10. **Roadway Crossings:**
None

11. **Map Reference:** N



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